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Hog Transportation and Regulation in Alberta

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by

Gregory R. Smith

A THESIS

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Abstract

The purpose of this study was to study the hog transportation industry in Alberta. Reference is made to both pricing and operational efficiency, each of which impact on market efficiency. Pricing efficiency observations are made with respect to government regulations and operational efficiency concerns deal with the Alberta Pork Producers Marketing Board (APPMB).

The APPMB was found to be operationally efficient, given the circumstances under which the APPMB must operate. Improvements in market efficiency will primarily arise via deregulation of the trucking industry. These improvements will be closely linked to improvements in pricing efficiency.

A review of recent studies on trucking regulation provided the background to issues in Canadian trucking regulation. Reference is made to the historical development of trucking regulations as well as the federal and provincial roles in trucking regulation. Also included in this study is a review of the procedures for obtaining an extra-provincial operating authority. It appears that there are problems with the process for the granting of operating authorities. One of the problems that the study has pointed out is the apparent lack of a definition for the term "in the public interest" which is used in public hearings.

A questionnaire was sent to truckers hauling hogs in Alberta to gain information on rates, costs, backhauls, and

equipment. The response rate for the questionnaire was low. However, the use of data on rates and destinations supplied by the Alberta Pork Producers Marketing Board enabled the researcher to fulfill and supplement the objectives of the questionnaire. In the study for example, it is shown that trailers tend to be underutilized on backhauls, rates are variable between census divisions and total costs are in many cases unknown by respondents.

This study chose linear programming as the tool to present a situation which minimized transportation costs, for hogs marketed in Alberta, over a one year period. Results from the model showed that minimized costs were slightly over 7.4 million dollars, which in turn were compared to the costs of actual hog movements. The difference between the modelled results and the actual results was approximately 1 million dollars or 14 percent. Therefore, it would appear that the actual performance of the Alberta Pork Producers Marketing Board, which must minimize costs on a day to day basis, was close to the modelled results.

Presented below are some of the major recommendations from the study. In the case of extra and intra provincial operating authorities it is recommended that the term domestic livestock not be used and in its place specific livestock be listed. For example an authority will specify the type of livestock (hogs) which trucking firms may haul. Hogs, being a primary agricultural good should be exempt

from regulations. The nature of the product requires that time for delivery to market be at a minimum. This would be in line with the exemptions for primary agricultural goods in the U.S. The recent proposed changes in trucking regulation agreed upon by federal and provincial agencies would shift the burden of proof from the applicant to the respondent for the granting of operating authorities, and is fully supported by this study. This proposed change would make the hearing process more equitable and the incidence of frivolous objections would be greatly reduced.

Acknowledgements

I would like to thank Dr. Murray Hawkins for his support and advice while I was undertaking this project.

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Table of Contents

Chapter — Page

I. Hog Transportation in Alberta 1

A. Introduction 1

B. Problem Setting 4

C. Objectives of the Study 8

D. Data Sources 9

E. Analytical Procedures 10

F. Limitations of the Study 11

G. Organization of the Thesis 12

II. Regulation in the Canadian Trucking Industry 14

A. Introduction 14

B. History of Trucking Regulations 14

C. Federal and Provincial Roles in Trucking Regulation 18

D. Public Interest 21

E. Economic and Non-Economic Regulations 23

F. Cost of Regulation 30

G. Allocative Effects 34

H. Concentration 35

I. Alberta Livestock Regulations 38

J. Operating Authorities 41

Application for Extra-Provincial Operating Authority 42

The Certificate of Support of Application for Extra-Provincial Operating Authority 44

Appeals and Oppositions to Operating Authorities Found in the Operating Authority Certificate, Formal Public Hearing Order 48

Costs 51

K. Recent Changes Proposed and Agreed Upon in Principle 56

L. Summary and Conclusion 57

III. Trucking Industry Responses 59

A. Objectives of the Questionnaire 59

B. Limitations of the Questionnaire 61

C. Alberta Pork Producers Marketing Board Data Used to Supplement Questionnaire Results 64

D. Results From the Questionnaire 64

Section A - Equipment 64

Average Length of Haul for Hogs Only 65

Section B - Utilization 67

Percent of trips at full load 67

Percent of total trips with back hauls 69

Types of goods most frequently hauled back and the percent of distribution 71

Part C - Service Provided and Areas Served ..72

The main area(s) in Alberta in which the majority of respondent's business takes place 74

Section D - Rates 77

Total costs per running mile/km by truck type 78

E. Comments Received By Respondents 81

F. Summary and Conclusions 83

IV. Model Results 87

A. Introduction 87

B. The Linear Transportation Problem 87

C. Sources of Data 89

Demand 89

Supply 92
D. Transportation Matrix 92
Routes Chosen 95
Rate Schedule 96
E. Limitations of the Model 97
F. Marketing Considerations 98
G. Model Results 100
U.S. Hog Movements 102
Canadian Hog Movements 103
Alberta Hog Movements 103
1984 Hog Movements 104
Total Costs from the Model 105
1984 Costs for Alberta Hog Movements 105
H. Summary of Chapter IV 108
V. Conclusions and Recommendations 110
A. Fulfilment of Objectives 110
Objective Number One 110
Objective Number Two 112
Objective Number Three 113
Objective Number Four 114
B. Recommendations 115
C. Recommendation for Further Studies 118
Bibliography 119
Appendix I 124
Appendix II 126
Appendix III 139
Appendix IV 144

Appendix V 146

List of Tables

Table		Page
II.1	Federal and Provincial Regulations Applying to Motor Carriers	24
II.2	Provincial Regulatory Agencies, Entry and Rate Regulations	25
II.3	Four Firm Concentration Ratios by Geographic Market and Commodity Group	36
II.4	Trucking Establishments and Revenue by Class - 1974	39
III.1	Truck and Tractor Trailer Combinations, Alberta, 1984	66
III.2	Average Percentage Use for Units Hauling Hogs, Beef and Other Livestock, Alberta 1984	68
III.3	Hog Trucking Operators by Census Division in Alberta 1984	76
III.4	Average Dressed Hog Transportation Rates by Census Division, Alberta, 1984	79
IV.1	Hog Demand (1984) for the Six Demand Nodes Used in this Study, Alberta 1984	91
IV.2	Hogs Dressed Weight Settlements by Subdivisions, Alberta 1984	93
IV.3	Alberta Transportation Costs: Actual and Model Results, 1984	106

List of Figures

Figure Page

II.1 Description of Level of Concentration 37

I. Hog Transportation in Alberta

A. Introduction

The movement of hogs by truck both within and outside of Alberta forms an important link in the producer to consumer flow of hogs and hog products. Trucks are the major mode of transportation for moving hogs from the producer to the packing plants.

Truck transportation has been regulated (see introduction to Chapter II for a definition of regulation) in Canada for over 50 years. Many individuals in the private and public sectors have questioned the need to regulate trucking. This concern has arisen in light of changes which have occurred over the last 50 years in the trucking industry. McLachlan (1971) studied the need to regulate trucking by comparing the trucking regulations in Alberta with those of several other provinces in which trucking was considered to be heavily regulated. In many cases the Alberta trucking industry was found to be further ahead or at least no worse off than trucking firms in more regulated provinces, using for example, profits and number of business failures. Alberta is considered as one of the "less" regulated provinces. Intra-provincially Alberta truckers are not subject to entry or rate regulations. Extra-provincially truckers are subject to entry regulations but not rate regulations.

In a comparison of variability of profits McLachlan showed that "trucker profits are virtually unaffected by the presence or absence of regulation."[1] However, with regard to rates, McLachlan demonstrated that prices tended to be higher under regulation.

McLachlan also investigated the effects of regulation on private motor transport (PMT) (vehicles owned by the shipper) and the use of PMT in regulated provinces as a substitute for for-hire carriers. He infers that

> "It is probable that regulation via its effect on price and the flexibility of the for-hire carriers has induced some shippers to turn to substitutes such as PMT. In this sense regulation has probably damaged the interests of the for-hire carriers, as it has tended to exclude them from business that would otherwise probably have been theirs."[2]

McLachlan cites Alberta as being less regulated relative to other provinces. Nevertheless, there are concerns in Alberta, especially with regard to extra-provincial trucking. Regulations have hindered the movement of commodities by carriers (without operating authorities), who feel they can offer a service at a competitive rate relative to the carriers with an operating authority. An operating authority provides the right to operate a vehicle which carries certain goods over set routes. Comments made by these individuals will be reproduced in Chapter III dealing with the questionnaire.

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[1] McLachlan, D.L. *Canadian Trucking Regulation*, Discussion Papers Series #17, (University of Calgary, Department of Economics, 1971), p.24.
[2] McLachlan, p. 34.

There are no recent studies which investigate the movement of hogs and related trucking rates in the province of Alberta. Dawson, in 1971, studied the effects of reducing the number of hog assembly locations in Alberta, and employed a transportation model to calculate the minimum costs of shipping hogs from supply locations to assembly points in Alberta.

Currently the Alberta Pork Producers Marketing Board (APPMB) is concerned with the variation in trucking rates both intra-provincially and extra-provincially. These concerns are reflected in the APPMB decision to purchase trailers for the movement of hogs across provincial borders. This action by the Board is representative of the argument put forth by McLachlan regarding private motor transport as quoted earlier. The use of PMT has already resulted in adjustment in rates toward those in areas where the Board were operating these trailer units. In view of these changes, the Board recently has sold these units.

The present regulatory system has given rise to inequities in the granting of operating authorities, which in essence allow a holder of an operating authority to charge prices which may be above those offered by carriers who do not have an authority. For example, unauthorized firms have not been permitted to offer trucking services to the APPMB and the producers due to the present regulations. An investigation of the proceedings involved in the granting of an operating authority as well as some of the drawbacks

of the proceedings are reported in Chapter II. Included in the discussion is an outline of the obstacles which carriers and shippers face in obtaining an operating authority.

In the near future the present regulatory system for trucking will be changed, as agreed upon by the provincial and federal governments. This agreement will be an attempt to consider expanding the list of commodities which will be classified under the "ease of entry" conditions. These would be commodities, the transportation of which, may be authorized without proof of public need and convenience. Under the changes proposed, firms would no longer attempt to operate by maximizing returns based on the present regulatory framework. The objective of the proposed changes is to increase the efficiency of the Canadian trucking industry through reducing the cost of compliance and through encouragement of greater competition.

B. Problem Setting

The Alberta Pork Producers Marketing Board in cooperation with the Alberta Agricultural Research Trust has funded this study of the transportation of hogs (rates and destinations) in Alberta. Incorporated in the study will be an analysis of market efficiency, with respect to trucking. Comparisons between areas and within areas will be made to gauge how well the trucking industry is serving the interests of the producers. These comparisons will be based on the number of carriers hauling in an area, variability of

transportation rates and pick-up charges. The comparisons will be done in aggregate and by region. The information gathered may indicate deficit and surplus areas with respect to trucking services. A questionnaire which was sent to truckers hauling hogs will be used to gather data to analyze the above comparisons.

In gauging market efficiency it is usual to look at the operational and pricing efficiency components. In the marketing process a product moves through various stages producing time, form, and place utility. Each of these stages has a cost attached and the sum of these costs are a measure of operational efficiency. Pricing efficiency deals with price and whether or not market price reflects costs, taking into consideration the various market structures.

Operational efficiency is measured by the effort made by both firms and individuals to attain the lowest or optimum per unit costs. Over the short run there are three options given to firms:[3]

1. Select input-output systems which maximize output per unit of input.
2. Select the least cost combination of factors and ingredients.
3. Minimize procurement and distribution costs.

The announced changes forthcoming in the regulations governing trucking in Canada should increase operational

---

[3] Williams, W., and Stout, T. *Economics of the Livestock-Meat Industry*, (The Macmillan Company, N.Y., 1964), p. 139.

efficiency. The least cost combination of factors and ingredients will no longer involve the same degree of regulatory costs once the changes in deregulation take place.

The pricing efficiency aspects of a market involve several important conditions. Listed below are these conditions as identified by Williams and Stout:[4]

1. More competition, generally speaking, is better than less competition.
2. Restrictions on entry and exit or barriers to trade are usually considered impediments to progress and a competitive market place.
3. Markets will function better with more information than less.
4. Buyers and sellers should be equally and uniformly informed.
5. If grades, standards, weights, weighing procedures, etc. are carefully defined, pricing and physical handling will be more efficient.
6. Freedom from excessive government interference is necessary.
7. The rules of the game are explicit and enforced.

Using the above conditions, found in Williams and Stout, it could be said that many of the above conditions are violated in a regulated industry, which might indicate

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[4] Williams, W., and Stout, T. p. 146. Cited by Hawkins, M.H., *Alternate Methods of Marketing Livestock*, (Paper prepared for presentation at the CAES Annual Meeting, Saskatoon, Saskatchewan, 1969), p. 4-5.

that price is not being established competitively. For example, with reference to criteria number two, the barriers to entry criteria; barriers to entry and exit are the standard situation in the majority of regulated industries. These legally sanctioned rights may allow protected industries to be relatively inefficient, with very little stimulus to innovate, as compared to the more competitive industries.

In the case of market information the users of trucking services in the livestock industry have little information on competitive pricing. An example of reduced market information would be the cessation of the publishing of suggested rates for hauling livestock by the Alberta Truckers Association.

The sixth criteria may also be violated, possibly resulting in the further erosion of pricing efficiency. Many of the questionnaire respondents stated that they were in favour of trucking deregulation with government involvement kept to a minimum. However, government involvement with regard to safety and hours of operation is acceptable to industry individuals.

With regard to the rules of the game being explicit and enforced, evidence presented in Chapter II shows that the procedures for granting operating authority are far from explicit and enforcement of the conditions of the authorities is somewhat lacking. By and large, the present regulatory system and the lack of homogeneity within and

between provinces, with regard to interpretation of procedures, contributes to an increase in the pricing inefficiencies in the Canadian trucking industry.

With the above considerations in mind the current transportation system for hogs in Alberta does not meet all of the necessary standards for an efficient marketing system. Future changes in the regulatory system, as recently announced, may remove many of the regulations which increase cost and reduce pricing efficiency. The effects of these changes over a period of time should be the subject of future studies.

C. Objectives of the Study

The four objectives in this study, can be classified under the two areas of market efficiency, namely pricing and operational efficiency. The first objective deals with pricing efficiency while the second, third and fourth objectives are primarily concerned with operational efficiency.

The specific objectives were to:

1. evaluate the major regulations which affect the trucking industry.
2. document current transportation rates and volumes of shipments from selected supply nodes.
3. prepare an inventory of the numbers of vehicles, capacity and type which are available for hog transportation in Alberta.

4. study the cost (rates x number of hogs) of hog transportation for Alberta.

D. Data Sources

Data on hog production for the study were taken from the producers records kept by the Alberta Pork Producers Marketing Board. The data were obtained by counties, special areas and improvement districts by using a computer program that grouped producers by their postal codes. The summary data on hog production were used to establish nodes in the linear programming model.

The central core area (see map in Appendix I) of hog supply represents approximately 84% of Alberta's hog production. In terms of census divisions the above core would include numbers 2, 3, 5, 6, 8, 10, 11, 13 and exclude 1, 4, 7, 9, 12, 14 and 15.

Transportation rates were established from APPMB data and from conversations with individuals in the trucking industry. On the demand side, volume from the major packing centers were employed. This data includes out of province shipments to South Dakota, British Columbia (B.C.) and Northern California. Additional data were obtained from Statistics Canada, Agriculture Canada, Alberta Agriculture and the APPMB. Data on regulation were found in several working papers and Economic Council of Canada Studies referenced in this text.

E. Analytical Procedures

In order to meet the stated objectives of the study the following procedures were used:

1. The documentation of current transportation rates and volumes of shipments from selected supply areas, necessitates the use of (confidential) information from the APPMB for trucking rates as well as volumes. The necessary information comes from manifests which are submitted by the trucking firms in order to receive payment from the board.
2. A questionnaire was used to obtain information on numbers of vehicles, capacity and type.
3. A linear programming model was used to estimate minimum costs of transporting pigs between supply locations and demand locations in Alberta.
4. Supply locations for use in the linear programming model were established by choosing a point within a specified area which minimized transportation in the area.

   The actual supply locations or nodes within the census divisions, which were further broken down (where applicable) into subdivisions, were chosen to meet the following criteria:

   a. Towns chosen are central to their respective subdivisions.
   b. All subdivisions represent the existence of well established sources of hog supply. (This is consistent with the logic employed by Dawson

1971).[5]

5. The established packing centers in Alberta were identified as demand nodes. Prior to the closing of the Burns operation in Calgary in June 1984, the three demand centers were Edmonton, Red Deer and Calgary. For the purposes of this study it was deemed necessary to retain Calgary as a demand node, given that the demand for hogs in Calgary up to June 1984 exceeded the shipments to British Columbia for all of 1984. In line with the current market situation the study includes South Dakota, B.C. and Northern California as the fourth, fifth and sixth demand centers. In 1984 approximately 15% of Alberta's hog production went to the U.S.[6]

A transportation matrix was developed, which included provincial distances, as well as mileage to South Dakota, Northern California and British Columbia.

F. Limitations of the Study

The limitations of the study are presented in individual chapters where necessary. For example in Chapter III there is an extensive discussion of the problems encountered usng a questionnaire. In Chapter IV is outlined the limitations of the transportation model, and the

---

[5] Dawson, J., "Hog Assembly Centre: Alberta Locations Analysis", (Unpublished M.Sc. thesis, University of Alberta, Department of Rural Economy, 1971), p. 55.
[6] Personal communication, Rod Buray, Alberta Pork Producers Marketing Board.

difficulties associated with estimating actual hog movements in the province of Alberta.

G. Organization of the Thesis

Chapter II reviewed recent working papers and Economic Council of Canada papers (referenced in this text), to provide an overview of the regulations in the trucking industry. Included in this overview are the historical roots, roles of the administrators and some estimated costs of regulation in Canada.

Following this introduction to trucking regulation is a review of the procedures for obtaining an operating authority as well as the public hearing process in the province of Alberta.

The results of the questionnaire sent to truckers who are actively hauling hogs for Alberta producers are presented in Chaper III. This list of truckers was obtained from the APPMB. There were deficiencies in the questionnaire which were not revealed in the testing procedure, but which were pointed out by respondents. Chapter III includes a discussion of these shortcomings.

Chapter IV contains the description of the linear programming model used in this study to estimate the minimum annual cost of transporting hogs given 1984 production volumes and calculated 'average' transportation rates. Currently within the province individual truckers negotiate rates with producers. Data on these rates supplied by the

APPMB and data obtained from the questionnaire returned by truckers showed that hog transportation rates can vary depending on the structure used by an individual trucker. For example, charges for loading the hogs can be charged separately or included in the transportation rate. Pick-up/assembly charges also vary a great deal. For example, when rates are low, pick-up charges tend to be high. Rates are influenced by factors such as utilization (e.g. availability of back hauls), distance to market and average size of loads. In addition, the level of competition in an area affects the rates charged to producers.

A summary of results and conclusions from the study along with recommendations for further analysis are included in Chapter V.

II. Regulation in the Canadian Trucking Industry

A. Introduction

In Canada, both common and contract carriers are subject to Federal and Provincial regulations. The trucking industry has been described as competitive on a national level. It has been alleged that on a regional or district level the industry is not as competitive (see comments in Chapter V and Hirshhorn, p. 50). In Canada, provinces regulate trucking separately and there is a wide range of regulations and application of these regulations.

In order to understand what is meant by regulation, the Economic Council of Canada (ECC) definition is acknowledged as a basis for discussion in this study:

> "the imposition of constraints, backed by government authority, that are intended to modify the economic behaviours of individuals in the private sector significantly".

The primary objective of this section is to point out how the above definition impacts on the trucking industry. The discussion includes a brief history of the development of trucking regulations and a brief overview of the roles of the administrative players or government agencies.

B. History of Trucking Regulations

Following is a brief discussion to present an understanding of the events, which over time, have shaped trucking regulations. Before the turn of the century trucks

were not prominent in the transportation of products in Canada. The majority of the transporting of goods was in the hands of firms connected with rail and water transportation. In the early 1900's the use of trucks for transporting goods was confined mostly to the intercity and short haul markets. This split was due largely to the physical limitations of the trucks and to the lack of a supportive infrastructure (i.e., roads and service centres). Thus, the railways had a cost advantage in transporting goods. The early expansion of roads and highway systems reduced the physical limitations of hauling by truck but the cost advantage for the railways was still a formidable barrier to the expansion of the use of trucks for a considerable time. For example, it was estimated by John Magee that "As late as 1948 the distance beyond which the railways possessed a cost advantage was estimated at 35 miles."[7] Concurrent with the above mentioned infrastructure improvements, there were complementary improvements in trucking technology, (i.e., diesel power and better mechanical systems) which allowed the trucking industry to become cost competitive with railways over longer distances. Cost competitiveness eventually lead to the regulation of trucking.

There were three primary reasons given for the introduction of trucking regulations in Ontario:

1. "the public nuisance" factor

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[7] Magee, J., *Trans-Canada Trucking, 1960* cited by Purdy, H.L., *Transport in Canada, Competition and Public Policy." (University of British Columbia, 1972), p. 28.*

2. "the railway" factor

3. the truckers themselves[8]

The public nuisance factor emerged from the nature of the trucking industry and the effects it had on the public. Factors such as noise, horse reaction, road sharing, loading and unloading brought the industry to the legislators' attention. The "railway" factor, was simply how the owners of the railways felt about the trucking industry. Some of these opinions are reflected in the following statements.

> "They themselves were regulated (Ottawa established the Board of Railway Commission in 1904); they tended to view some of their own difficulties being caused by the emerging trucking industry's increasingly successful attempt at diverting traffic from rail to road; and, their response to this situation was to lobby for various forms of motor carrier regulation."[9]

Truckers' interest in regulation stemmed from the nature of the trucking industry. It was felt that regulation would be needed to stabilize an industry characterized by "highly competitive forces".[10] Consequently the regulations desired by truckers were intended to form a barrier to entry by only allowing those with a license to enter the industry.

Provincial interest in trucking regulation intensified during the late 1920's and early 1930's. This was the time when the issue of "destructive competition" was brought to light as a basis for regulation. The catalyst was the

---

[8] Economic Council of Canada, *Motor Carrier Regulation: Institutions and Practices*, (Working Paper #E/I1, prepared by Nix, F., *et al.*, Ottawa, 1980), pp. 10-12.
[9] *Ibid.*, p. 11.
[10] *Ibid.*, p. 12.

depression in the 1930's, when problems arose due to excess capacity. Much of the early regulatory legislation (for example, the 1934 Ontario Public Commercial Vehicles Act) contained provisions to test "public convenience and necessity" as a requisite to enter the trucking industry.[11] The development of public convenience and necessity came about as the result of the 1931 Royal Commission (titled the Duff Commissions) recommendations. The majority of the provinces followed Ontario's lead adopting public convenience and necessity as a basis for the granting of licenses.

There were several other Royal Commissions dealing directly and indirectly with trucking regulations. These are briefly described below in conjunction with the key recommendations of each.

The Chevrier Royal Commission was initiated in 1937 through pressure exerted by the railway companies who were concerned with unfair competition. This commission recommended that trucking be regulated, and included certain rate recommendations.[12]

In 1951 the Turgeon Commission, which dealt with railways, commented that since "railways were regulated" there seemed "to be no valid reason" why motor carriers "should not be asked to submit to a similar form of

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[11] Economic Council of Canada, *Responsible Regulation Interim Report*, (Ottawa, 1979), p. 21.
[12] Economic Council of Canada, *Motor Carrier Regulation: Institutions and Practices*, (Working paper #E/I1, prepared by Nix, F., *et al.*, Ottawa, 1980), p. 21.

control."[13]

The 1961 MacPherson Commission did not recommend economic regulation for the trucking industry but was instrumental in the establishment of the National Transport Act (1967).[14]

C. Federal and Provincial Roles in Trucking Regulation

Federal jurisdiction over inter-provincial carriers, such as the railways, was granted under the British North America Act (B.N.A. Act). However, as long as the fledgling trucking industry remained within the provinces it operated under provincial jurisdiction. It was inter-provincial trucking which brought about a decision by the Privy Council of England. The 1954 "Winner Decision" was that "federal government had jurisdiction over extra-provincial motor carrier operation and that any operation which had any extra-provincial business at all was an extra-provincial business".[15] Key words such as **any** imply that even if a firm had .01% of their business outside of their province of origin they would be considered an extra-provincial carrier. The federal government was opposed to dividing the jurisdiction of intra- and inter-provincial trucking and in

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[13] Economic Council of Canada, *Motor Carrier Regulation: Institutions and Practices*, (Working paper #E/I1, prepared by Nix, F., *et al.*, Ottawa, 1980), p. 22.
[14] *Ibid.*
[15] Schultz, R., *The Development of Regulation in Canada*, Cited by Nix, F., *et al.*, *Motor Carrier Regulation: Institution and Practices*, (Working paper #E/I1, Ottawa, 1980), p. 17.

1954 passed the Motor Vehicle Transport Act (MVTA).[16] This act gave each province the right to regulate, via licensing, inter-provincial interest both into and through the provinces. It should be noted that this was an "adoption by Parliament of the legislation of Provincial Governments."[17] The above is similar to the 1949 Agricultural Products Act which gave provincial marketing boards powers to regulate inter-provincial trade.

By the time the federal government had granted inter-provincial regulation rights to the individual provinces, each province had developed its own regulations. The result of individual action by the provinces was a lack of homogeneity in regulations between provinces.

The federal government did make efforts to harmonize trucking regulation in Canada using input from various Royal Commissions, in particular the MacPherson Commission of 1961 led to the passing of the National Transport Act (N.T.A.) in 1967.

> "Part III of the NTA anticipated the return of the responsibility to regulate extra-provincial motor carriers to the federal government or its regulatory agency, the Canadian Transport Commission."[18]

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[16] Economic Council of Canada, *Regulation and Performance in the Canadian Trucking Industry*, (Technical Report No. 23, prepared by McRae, J., and Prescott, D., Ottawa, 1982), p. 9.

[17] Schultz, R., *The Development of Regulation in Canada*, Cited by Nix, F., *et al.*, *Motor Carrier Regulation: Institution and Practices*, (Working paper #E/I1, Ottawa, 1980), p. 18.

[18] Economic Council of Canada *Motor Carrier Regulation: Institutions and Practices*, (Working paper #E/I1, prepared by Nix, F., *et al.*, Ottawa, 1980), pp. 18.

However as of 1982, Part III of the Act dealing with federal regulation has not been empowered. What is needed to make Part III of the act operative is that "the Federal cabinet must take back the responsibility for the regulation of extra-provincial undertakings which were previously delegated by parliament in 1953 to provincial authorities."[19] There have been discussions going on between provincial and federal governments since 1969, but as is typical of situations when there are many participants, a final solution is difficult to achieve.

Notwithstanding, an important move by the federal government has been their membership into The Canadian Conference of Motor Transport Administration (CCMTA). A goal of the CCMTA is to make the provincial regulations more homogeneous. One must note that Part III of the N.T.A., delegated to the Canadian Transport Commission, also had the goal of "harmonizing the operation of all extra-provincial motor vehicle transport."[20] Thus, the lack of homogeneity in transportation regulation continues to force the analysis of trucking regulation to take place on a province by province basis.

The lack of homogenity is an ongoing concern to the Motor Transport Board of Alberta. The Board reports in the

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[19] Law Reform Commission of Canada, *The Regulatory Process of the Canadian Transport Commission*, (Prepared by Janisch, H., Pirie, A., and Charland W., Ottawa, 1978), p. 35.
[20] Economic Council of Canada, *Regulation and Performance in the Canadian Trucking Industry*, (Technical Report No. 23, prepared by McRae, J., and Prescott, D., Ottawa, 1982), p. 9.

1982/83 Annual Report that:

> "Board members worked within the Canadian Conference of Motor Vehicle Administrators (CCMUA) and Roads and Transportation Association of Canada (RTAC) in a continuing effort to bring about national uniformity in regulations and policies for carriers transporting goods and people."[21]

D. Public Interest

This brief discussion incorporates the term "Public Convenience and Necessity", also used frequently by various boards in the granting or denying of operating authorities. The terms "Public Convenience and Necessity" and "In The Public Interest" have similar meanings in the regulatory process. In either case the meaning is unclear and not well defined by the regulatory boards. One should bear in mind that the term "public interest" is a dynamic concept, which partially explains why no set definition exists.

There is a body of literature dedicated to explaining regulation and the public interest issues. The Canadian text "Transportation Policy: Regulation, Competition and the Public Interest" deals extensively with the question of defining the public interest. The following quote will help convey the concern regarding the above terms.

> "A central problem is the inherent difficulty for reasonable men (not to mention unreasonable ones) to agree on what is in the public interest in a particular situation. But the public interest is the real thrust of public decision-making. To administer regulations and to make decisions, it is necessary either to have precise rules which leave no room for

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[21] *Alberta Transportation Annual Report* 1982-1983.

> administrative interpretations or to rely on the judgements of reasonably prudent men in positions of responsibility...

further,

> "The inability to provide a precise definition of the public interest stems from a number of causes. It reflects the limitations of decision making in a democracy. It may be impossible to produce a unique social objective function when members of society do not agree on the objectives to pursue nor on their relative importance."[22]

Having the public interest question raised, as it is in many public hearing processes, could very well bring forward a lengthy list of concerns why applications should or should not be granted. Individuals opposed to the granting of an authority using the public interest argument could cite for example:

1. reduction in service availability
2. inability of the applicant to provide the intended service
3. reduction in competition and price discrimination

In the case of trucking regulations in Alberta, members of the board do not have a precise definition of public interest. This increases the possibility of an individual or group of individuals presenting cases which in fact may sway the board or become in essence the public interest in the decision of board members.

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[22] Waters, W.G., *Public Policy and Transport Regulation: Economic Perspective*, in *Transportation Policy: Regulation, Competition, and the Public Interest*, Ruppenthal, K. and Stanbury, W., eds., (The Centre for Transportation Studies, UBC, Vancouver, 1976), p. 29.

E. Economic and Non-Economic Regulations

Non-economic regulations as defined in the ECC technical report number 23 would include, for example, conduct of drivers, hours of work and consumer protection.[23] Table II.1 includes some of the non-economic regulations which differ from province to province unless they fall under federal jurisdiction.

The first major economic regulation to be considered is entry control. All provinces (see Table II.2) regulate extra-provincial trucking. However, intra-provincial trucking in regard to entry is regulated in all provinces except Alberta. The requirement of a certificate of "public convenience and necessity" is applied differently among the provinces. It should be noted that the interpretation of this requirement by the various provincial boards "supports the view that provincial regulations have constituted a substantial impediment to entry into this industry."[24] The main concern of provincial boards seems to be the impact of new entrants on the market. Subsequently, the burden to prove public convenience and necessity is in most cases placed upon the applicant. An illustration would be "The British Columbia Motor Carrier Commissions". This commission maintained, for example, that "the burden is upon the applicant... to establish by substantial evidence that there

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[23] McRae,J., and Prescott, D., *Regulation and Performance in the Canadian Trucking Industry*, p. 12.

[24] Economic Council of Canada, *Trucking Regulation in Canada: A Review of the Issues*, (Working paper No. 26, Prepared by Hirshhorn, R., Ottawa, 1981), p. 22.

Table II.1

Federal and Provincial Regulations Applying to Motor Carriers

Type	Level	Common	Contract	Private	Household
Entry, etc.					
Proving need	P	X	X		X
Operating permit	P	X	X		X
Arrange interline agreement	P	X			X
Acquisition permit	FP	X	X		X
Subsidies	F	X	X		X
File Tariffs	P	X	X		X
Revise published tariffs	P	X	X		X
Insurance	P	X	X	X	X
Labour Regulations (age etc.)	P	X	X	X	X
Vehicle Licences	P	X	X		X
Operations					
Permit limits					
- routes	FP	X	X		X
- interline	P	X			
- LTL-TL	P	X	X		
- livestock	FP		X	X	
- dimensions	P	X	X	X	X
- license reciprocity	P	X	X	X	X
- regulatory reporting	FP	X	X	X	X
- customs	F	X	X	X	X
- agricultural regulation	F	X	X	X	X
- health regulation	FP	X	X	X	X
- sales and fuel tax	FP	X	X	X	X

X - regulation applies
F - federal
P - provincial

Source: Adapted from Transport Canada, *Competition in Trucking Industry Conduct*, August 1979. Cited by Hishhorn, p. 15.

Table II.2

Provincial Regulatory Agencies, Entry and Rate Regulations

	Regulatory Agency	Entry Regulation	Rate Regulation
Newfoundland	Board of Commissioners of Public Utilities	intra and inter-provincial for-hire motor transport requires a certificate of "public convenience and necessity"	a few rates are prescribed; most others - both intra and inter-provincial - must be fixed and approved
PEI	Public Utilities Commission	"	all tariffs must be filed with Commission
Nova Scotia	Board of Commissioners of Public Utilities	"	tariffs must be filed (new rates must be on file within 15 days of change)
New Brunswick	N.B. Motor Carrier Board		" (")
Quebec	Quebec Transport Commission	"	rates for both intra and inter-provincial carriage must be approved by the Commission
Ontario	Ontario Highway Transport Board, Minister of Transportation and Communications	"	tariffs must be filed (tariff change do not become effective until 30 days after filing)
Manitoba	Manitoba Motor Transport Board	"	intra-provincial rates are prescribed by the Board; there is no regulation of extra-provincial rates
Saskatchewan	Saskatchewan Highway Traffic Board	"	minimum and maximum rates are prescribed for intra-provincial general freight; a large number of commodities shipped intra-provincially are exempt from rate control; there is no regulation of extra-provincial rates

Continued ...

Table II.2 Continued

	Regulatory Agency	Entry Regulation	Rate Regulation
Alberta	Alberta Motor Transport Board, Minister of Transport	intra-provincial trucking is not subject to effective entry control; extra-provincial trucking is regulated as in other provinces	there are no requirements with respect to rates
B.C.	B.C. Motor Carrier Commission	usual licensing requirements apply to intra and inter-provincial for-hire truck transport	most intra-provincial rates must be filed and approved by the Commission; rates on extra-provincial carriage are not regulated

Source: Adapted from Hirshhorn, R., "Trucking Regulation in Canada: A Review of the Issues," Working Paper 26, ECC.

is a need for this service and that the existing facilities are inadequate to meet such needs."[25] With regard to rates and public convenience and necessity the Ontario board gives the following interpretation, "that rates are not a factor in determining public necessity and convenience, unless it is established that the existing rates are unreasonably high or exorbitant."[26] From the above quotations one could conclude that considerable effort could be exerted by a firm to receive an operating license with no guarantee of success. If the application for a license is refused it is quite possible the reasons may be unclear. Words such as unreasonable, substantial and inadequate are subjective which gives the provincial boards considerable freedom of interpretation.

In Table II.1, under permit limits, is listed another type of economic regulation called service provisions. These also differ between provinces due to the powers granted to the provincial boards for the selection and implementation of such provisions. A number of these regulations can also be found in the "Regulations Under the Public Service Vehicle Act" for the Province of Alberta. For example, conditions under dimensions are stated at length under section 1.8.1 of the P.S.V.A. This states clearly the

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[25] Nix, F.P., and Clayton, A.M., *Notes on Canadian Trucking Regulation, p. 30*, cited by Hirsshorn R., *Trucking Regulation in Canada: A Review of the Issues*, (E.C.C. Working paper No. 26, Ottawa, 1981), p. 23.

[26] Nix, F.P., and Clayton, A.M., *Notes on Canadian Trucking Regulation, p. 39*, cited by Hirshhorn, R., *Trucking Regulation in Canada: A Review of the Issues*, (E.C.C. Working paper No. 26, Ottawa, 1981), p. 24.

maximum width and weight trucks are allowed for operation on Alberta highways.

Exit control should be an important economic regulation when one considers the effort some boards go to in order to fulfil the condition of public convenience and necessity when ruling on applications for entry. It would seem that the same conditions should apply when a firm wishes to discontinue its service to an area. That is to say "The provincial regulatory boards should wish to control exit in order to continue the protection of the public interest."[27] Exit control is difficult to administer and enforce and the only example of a provincial board which attempts to enforce exit regulations is Newfoundland.[28]

The final economic regulation considered is pricing. Under pricing, the Tariff Bureau is considered as an important component of pricing. Rate regulation is just as variable between provinces as the rest of the economic regulations discussed, and with the exception of Ontario, all boards have the power to regulate rates. In Ontario's case, the board requires the filing of rates (by trucking firms) and it is the government department which has the authority to approve rates.[29] The majority of the other boards have the power to approve, disallow and prescribe

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[27] Economic Council of Canada, *Regulation and Performance in the Canadian Trucking Industry*, (Technical Report No. 23, Ottawa, 1982), p. 16.
[28] *Ibid.*
[29] Economic Council of Canada, *Motor Carrier Regulation: Institutions and Practices*, (Working paper #EI1, prepared by Nix, F., *et al.*, Ottawa, 1980), p. 39.

rates.[30] The above deals with intra-provincial rates only. Quebec and Newfoundland deal with extra-provincial rates.[31] The Province of Alberta only regulates the rates and conditions for public transportation within Alberta. The fact that the majority of the boards having the power to approve, disallow and prescribe rates may have contributed to the creation of the Tariff Bureau. The Bureau can be owned by carrier members, operated on their behalf or privately owned. The Tariff Bureau primarily function is to assist or actually file tariffs before the provincial boards.[32] Other functions of the Tariff Bureau are listed as follows:

1. Publishing tariffs for carrier members
2. A referral service to co-ordinate shippers needs and carrier abilities
3. Services for interline arrangements
4. Provides a forum for the discussion of rates
5. Information system to inform all carriers on rate changes by the competition.[33]

One could consider a tariff bureau as a type of brokerage firm in that they provide a link between buyers and sellers of trucking services. The above functions of the various tariff bureaus could increase pricing efficiency through the

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[30] *Ibid.*
[31] Economic Council of Canada, *Regulation and Performance in the Canadian Trucking Industry*, (Technical Report Number 23, Ottawa, 1982), p. 17.
[32] Economic Council of Canada, *Trucking Regulation in Canada: A Review of the Issues*, (Working Paper No. 26, Prepared by Hirshhorn, R., Ottawa, 1981), p. 57.
[33] *Ibid.*, p. 57.

distribution of information, and by increasing operational efficiency via the referral service and the interline operations. However, if trucking regulations have led to the creation of the tariff bureau this would indicate yet another additional cost above that of an unregulated trucking industry.

F. Cost of Regulation

Calculations of the cost of regulation require that one estimate both direct and indirect costs. Direct costs deal with administration and enforcement of regulations from the government side and compliance costs from the industry. Direct cost calculations are more readibly available than indirect costs, because indirect costs deal with various forms of inefficiency.[34] The inefficiencies tend to be spread over a large area of the economy and over long time periods. Thus indirect costs tend to be relatively greater than direct costs. Indirect costs are mentioned briefly in this study but the focus of the work , in this chapter, is on direct costs for which data are available.

Trucking regulations consist of rules of conduct levied against thousands of participants in different provinces. Corresponding public expenditure varies between provinces, depending on the amount of regulation and the size of the trucking industry within each province. The studies reviewed indicate the existence of problems in obtaining data on

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[34] Economic Council of Canada, *Responsible Regulation*, (Ottawa, 1979), p. 34.

administrative costs due to the carrying out of some functions by government agencies (boards, commissions) or "divisions with broader functional responsibilities."[35] That is to say, in some cases it becomes an impossible task to identify what is spent on administration for a particular component of a department with diverse responsibilities. However, costs are given as ten million dollars spent in 1978/79 by the provinces for administration and enforcement.[36] The highest expenditure by a province is Quebec at about seven million and the lowest being the Atlantic Provinces. For example, the regulation agency in New Brunswick spent under 50,000 (less enforcement costs).[37]

Costs to the trucking industry are of a greater magnitude than the public expenditure. The following is a list of elements which have a high cost of compliance to regulations in general:

1. Continuous monitoring of a process to ensure compliance, together with comprehensive record keeping.
2. Requirements to meet a level of compliance not presently achievable with available technology.
3. The need to acquire new capital equipment or significantly modify existing plant or equipment.
4. Compliance with stringent standards even though the

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[35] Economic Council of Canada, *Trucking Regulation in Canada: A Review of the Issues*, (Working paper No. 26, Prepared by Hirshhorn, R., Ottawa, 1981), p. 105.
[36] *Ibid.*, p. 106.
[37] *Ibid.*

risks have not been adequately assessed.

5. Frequently changing requirements, particularly when long-term capital commitments are necessary.[3']

Of the above the fifth element would not be as relevant to the trucking industry. In trucking, the long term commitments would consist of capital invested in terminal buildings and equipment whereas capital required to purchase a fleet of trucks is medium term capital; medium term, being about five years. This means that medium term capital investment could be greatly reduced simply by not replacing five year old trucks. Another element in the trucking industry which carries a large cost is the expenditure on the part of potentially new entrants seeking entry via the appeals to obtain an operating authority. If a particular market exhibits excess profits there will be expenditure by established carriers to keep the potential new entrants out.[3'']

In dollar terms there have been studies to estimate the cost of the regulatory process but these are difficult studies to undertake. To give an idea of the cost of compliance it has been explained that:

> "The direct administrative cost to the tax payer is only a minor element of total impact. Measuring the economic impact by these costs would be like estimating the height of a building by measuring the

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[3'] Economics Council of Canada, *Responsible Regulation*, (Ottawa, 1979), p. 35.

[3''] Economic Council of Canada, *Trucking Regulation in Canada: A Review of the Issues*, (Working paper No. 26, Prepared by Hirshhorn, R., Ottawa, 1981), p. 57.

height of the entrance to the building."[40]

The above short quote incorporates the costs of private concerns, while intimating that indirect costs would add greatly to the "height of the building." Bronson (1980) did undertake to estimate costs in the "for hire trucking" sector. With his sampling technique Bronson discovered that the cost of entry seeking and fore-stalling activities totalled about 40 million dollars.[41] This figure only covers the cost for the aforementioned two limited activities; there are other "regulatory-related activities."[42] It has been argued that Bronson's estimates are downward biased and that the total cost, both private and public, exceeds fifty million dollars. As such, the corresponding figures for all of Canada would necessarily far exceed those for the private trucking industry. In the United States the private costs in a 1976 study were estimated at 62.9 billion and the administration cost to be 3.2 billion dollars.[43]

One of the measures of indirect cost which should be considered is operational efficiency. This term relates to how close a firm is to the lowest cost for the service. Regulation may remove the pressure to provide the service with the lowest possible costs. Some of the possible reasons

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[40] Loevinger, Lee, *The Impacts of Government Regulation: The History and the Effect*, Cited in Economic Council of Canada, *Responsible Regulation*,, p. 36.

[41] Economic Council of Canada, *Trucking Regulation in Canada: A Review of the Issues*, (Working paper No. 26, Prepared by Hirshhorn, R., Ottawa, 1981), p. 108.

[42] *Ibid.*

[43] Economic Council of Canada, *Responsible Regulation*,, p. 36.

why cost is not as low as possible are entry control, less price competition, small numbers of competitors, regulated price structure and reduced incentives to innovate.[44] In the trucking industry operational efficiency depends upon the use of labour and capital to minimize:

1. Combination of linehaul costs.
2. Terminal and pick up costs.
3. Delivery costs to produce a given level and quality of service.[45]

Once regulated the objective is no longer to minimize costs as in a competitive market but rather to minimize costs "subject to the constraints arising from the terms and conditions of its license."[46] An interesting observation is that the more restrictive the terms of a license are, the more there exists a tendancy to increase the minimum costs, thus constituting a further impingement on operational efficiency.[47]

G. Allocative Effects

Regulations have the effect of "driving a wedge" between the market price and the costs of production.[48] If prices are above a competitive norm and quantity is restricted, there is bound to exist an inefficient

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[44] *Ibid.*
[45] Economic Council of Canada, *Trucking Regulation in Canada: A Review of the Issues*, (Working paper No. 26, Prepared by Hirshhorn, R., Ottawa, 1981), p. 110.
[46] *Ibid.*
[47] *Ibid.*
[48] Economic Council of Canada, *Responsible Regulation*,, p. 37.

allocation of resources. The resulting losses for consumers are measured in terms of consumer surplus and for society, in deadweight loss. The amounts depend on the elasticity of demand and the extent of regulation. Studies indicate that the demand in the for-hire industry is sensitive to rates.[49] An example of this is contained in an Imperial Oil report which shows that the oil company can transport its goods well below the for-hire rate in Ontario but not in Alberta. The amounts carried by the firms private fleet are 75 and 25% respectively.[50]

H. Concentration

This final section will consider concentration in the trucking industry. Using the four firm concentration ratio (market activity of the four largest firms in the industry), Table II.3 indicates the degree of competition. Applying for illustrative purposes, Greens scale (Figure II.1) to estimate the type of market structure that exists in Canadian trucking, one finds that the industry is characterized by both moderate oligopoly and atomistic competition.[51] The table does not indicate that provinces which are highly regulated tend to have concentrated industries. Hirshhorn (1981) suggests that due to route and commodity restrictions, it is more appropriate to examine

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[49] Economic Council of Canada, *Trucking Regulation in Canada: A Review of the Issues*, (Working paper No. 26, Prepared by Hirshhorn, R., Ottawa, 1981), p. 121.
[50] *Ibid.*, p. 122.
[51] Green, C., *Canadian Industrial Organization and Policy*, (McGraw-Hill Ryerson, Toronto, 1980), p. 45.

Table II.3

Four Firm Concentration Ratios by Geographic Market and Commodity Group

Geographic Region	Live Animals	Food	Crude Materials	Fabricated Materials	End Products	Miscellaneous Freight	Total
Atlantic	77.79	44.60	5.65	5.52	31.58	18.44	25.66
Quebec	8.31	11.03	37.01	12.49	8.20	14.43	14.06
Ontario	0.00	17.89	0.88	7.98	16.65	38.03	14.69
Manitoba	1.48	56.97	0.21	52.73	38.67	71.25	45.49
Saskatchewan	0.00	66.83	5.50	61.08	44.61	41.25	51.53
Alberta	0.00	4.57	3.45	36.38	7.81	7.07	17.95
B.C.	0.10	15.12	3.25	36.21	21.00	28.45	24.62
Interprovincial	4.17	9.12	6.85	9.92	10.25	14.34	10.07

Source: Transport Canada, *Definition and Characteristics of the Trading Markets: A Statistical Analysis*, January 1980. Cited in Hirshhorn, R. Trucking Regulation in Canada: A Review of the Issues p. 51.

Figure II.1

CR_4 %	Description of Level of Concentration
75 - 100	Very high: "tight" oligopoly
50 - 75	High: "tight" oligopoly
25 - 70	Moderate: "loose" oligopoly
below 25	Low: atomistic

Source: Green, C. "Canadian Industrial Organization and Policy." p. 45.

competition in specific narrowly defined markets.[52]

Table II.4 shows the breakdown of firms into various classes by revenue. The following conclusions are drawn from the study, which indicate the degree of competition. With respect to small shipments Class I carriers account for 80% of the revenue earned within Ontario.[53] Interprovincial small shipments between Quebec and Ontario Class I carriers had 85% and in the Alberta, B.C. market Class I carriers share of revenue was 80%.[54] Due to the fact that there are a large number of Class I carriers in each of the markets Green's listing showed a competitive industry. The information contained in the above E.C.C. papers suggest the possibility of highly concentrated markets with respect to small shipments in a narrowly defined geographic area.[55] Research indicates that a highly concentrated situation exists for some remote rural areas, and that when incorporating the concept of pricing efficiency, a review of the criteria listed would enable one to evaluate whether or not the price is set competitively.

I. Alberta Livestock Regulations

The above sections on regulation apply to trucks in general. The following section will discuss regulations specific to livestock. Included in this section will be

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[52] Economic Council of Canada, *Trucking Regulation in Canada: A Review of the Issues*, (Working paper No. 26, Prepared by Hirshhorn, R., Ottawa, 1981), p. 50.
[53] *Ibid.*
[54] *Ibid.*
[55] *Ibid.*, p. 52.

Table II.4

Trucking Establishments and Revenue by Class - 1974

Class	Operating Revenue of Class	% of Establishment	% of Operating Revenue
Class 1	$2 million or more	1.5	52.1
Class 2	$2,500,000-$1,999,999	4.6	19.3
Class 3	$100,000-$499,999	18.2	17.2
Class 4	$25,000-$99,999	41.8	9.2
Class 5	less than $25,000	34.0	2.3
		100%	100%

Source: Statistics Canada, *Motor Carrier Freight and Household Goods Movers*, Cat. #52-322. Cited by Horshhorn, p. 8.

several regulations which impact upon the livestock trucking industry. Under the Alberta Motor Transport Act subsists the Bill of Lading and Conditions of Carriage Order, which contains the regulations for the transport and care of livestock.

Sections of the regulations that affect the livestock hauling industry are definitions relating to:

1. the use of the livestock unit (health regulation),
2. the condition of animals for transport,
3. the feed and care of livestock on long hauls,
4. the condition of the livestock hauling units,
5. the space requirements for each type of livestock, and
6. the loading and unloading conditions.

In the case of the uses of livestock units the act states:

> No person shall use a public vehicle that has been used for transporting livestock, poultry or any offensive or putrefiable material of any kind whatsoever, for the transportation of foodstuffs for human consumption unless the vehicle has been thoroughly cleaned and placed in a satisfactory sanitary condition."[56]

The act states that;

> "No shipper or public vehicle operator shall load any animal that by reason of infirmity, illness, injury, fatigue or any other cause, would unnecessarily suffer during the journey unless that animal is to be transported to a veterinary clinic, to a confinement area or for slaughter."[57]

In the case of long hauls the regulations require that:

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[56] *Motor Transport Act Bill of Lading and Conditions of Carriage Order*, (Queen's Printer, Edmonton, 1984), p. 9.
[57] *Ibid.*, p. 9.

> "A public vehicle operator who transports, by public vehicle, livestock that is to be confined for a period in excess of 36 hours shall have for his use along the route all facilities necessary for loading, unloading, resting, feeding and inspection of the animals."[58]

In regard to the condition of the livestock hauling unit:

> "No public vehicle operator shall transport any animal in a public vehicle that has
> a. insecure fittings,
> b. any object projecting from the body of the vehicle that may cause injury to an animal being transported, or
> c. any broken, cracked or damaged siding or floor material."[59]

Under this order the minimum floor space to be provided for each animal is specified. In the case of loading and unloading the act provides specific width, rail height and material that provide safe footing which must be used. Also in the loading and unloading process:

> "No person shall beat or, by use of a prod, goad or other similar instrument, cause injury to an animal being loaded onto, or unloaded from, a public vehicle."[60]

J. Operating Authorities

This section outlines the procedures for the granting of an extra-provincial operating authority. Included in the analysis is an explanation of the major acts involved, procedures and requirements. This is followed by a discussion of the appeals and opposition to operating authorities as well as emergency procedures for a temporary

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[58] *Ibid.*, p. 10.
[59] *Ibid.*, p. 12.
[60] *Ibid.*, p. 12.

operating authority. The section concludes with a review of the public hearing process along with some examples of problems which might arise in the public hearing process.

Application for Extra-Provincial Operating Authority

Extra-provincial operating authorities are subject to the provisions of the Motor Vehicle Transport Act of Canada and the relevant acts in the provinces where application is being made. In Alberta the Public Service Vehicle Act (PSVA) constitutes the major piece of legislation. The PSVA covers all services in which any person or property is transported or drawn upon the highway, which includes buses, trailers, semi-trailers and self propelled machines. The other relevant Act in Alberta is the Motor Transport Act.

In describing the procedures for an application for extra-provincial operating authority (from provincial application forms), the same basic procedures are used to apply for intra provincial operating authority as far as the relevant provincial acts are applicable. In applying for extra-provincial operating authority, which will be referenced as authority in this text, the applicant must identify himself by his operating and/or trade name, head office and type of business. The application has provisions for both corporations and non resident carriers.

In the case of corporations, if they are not registered with the Alberta Companies Branch before receiving an authority they will have to register the company in Alberta.

Non-resident carriers of Canadian origin must file their latest financial statement and copies of authorization in order to operate public vehicles in other jurisdictions. U.S. carriers must supply a copy of the Interstate Commerce Commission (ICC) authority. Applicants are required to outline the specific commodities, giving origin and destination in the state or province. Also, applicants must list the name of shippers who will be supporting their application. These shippers must be prepared to appear before the Motor Transport Board at regular or public hearings if requested by the MTB. Procedures for a public hearing are described in the Operating Authority Certificate Formal Public Hearing Order which is contained in the Motor Transport Act, the relevant portion of which is described in the appropriate section of this study.

In the application for an authority the applicant must supply a list of the trucks, trailers and tractors employed in the operation (both owned and leased). The MTB requests that the list of equipment being leased have the names and addresses of the owners attached to the form. This requirement assists the Board in identifying those which may be termed as questionable (less than arms length) business dealings and possible cross subsidization. The applicant must also identify all other owned and/or leased property along with the type of base operation in Alberta, for example, dispatch office, administration office, service garage and storage facilities.

There are questions dealing with contributions to the Alberta economy in the form of monthly payroll and/or commission paid to Alberta residents. This raises questions as to the weighting given by the Board to firms which generate substantial activity in the Alberta economy. The powers of the MTB are discussed in the section dealing with the Public Hearing Order. The next section deals with Form B of the application to receive authority.

The Certificate of Support of Application for Extra-Provincial Operating Authority

Each shipper offering support to the application for authority must fill out form B (see Appendix II for the complete series of forms) and have the applicant attach the form to his application. A few of the questions are duplicated on both forms and include the listing of commodities, destinations and equipment required. This procedure serves as a cross check for members of the Board since the applicant must list the names and addresses of shippers and the services he will be performing for these shippers. In the application for support the MTB requests the shipper to list past and present carriers being used and any complaints the shipper may have with respect to service. Also the MTB requests the shipper to list other carriers that they are aware of who have the necessary authority to perform the services needed. This question is vague in that any member of the public can obtain a listing of carriers

who have extra-provincial operating authority by commodity. For example in livestock there are 141 carriers in Alberta with operating authority to move livestock extra-provincially. Given the list, a shipper could list a large number of these carriers who could perform the required service. In the same question the MTB inquires which of these carriers have solicited the shippers business and why they did not employ them. Following this is a conditional question asking if the application is granted, how will this granting improve the shippers business.

The final question deals with the nature of support for the applicant. This question inquires if support for the applicant is based on reduced freight rates or because of the service offered by the applicant. Alberta has no requirements with respect to rates. If the service is supported on the grounds of reduced rates, there appears to be no provision, without a careful breakdown of costs, as to what fair and representable rates would be. This makes a denial of an application on economic grounds questionable.

There are also provisions for an Emergency Temporary Authority. Information required on an application to obtain a temporary authority deals with length of time the permit is needed, the commodity and the destination. The carrier is asked if permanent application will be made in the future.

The shipper must complete a portion of the application form for an emergency operating authority. Questions on the form are designed to obtain information from the shipper

regarding the required destination of the commodity, number of trips required and the nature of the emergency. In addition the shipper is asked if he will be supporting a permanent application.

Shippers are also required to list the authorized carriers who had refused or had been unable to provide the service being requested. There are no provisions for a shipper to explain why they were refused or why the service was not provided.

The number of emergency permits allowed, for example in livestock, are 6 for a company and 3 for an individual per year. In the case of an individual or company who only occasionally requests a temporary authority the numbers do not seem too restrictive. However, for individuals or companies who are actively soliciting to serve a shipper while waiting for a permanent authority, the number of trips and the time involved in receiving an authority may endanger the carriers chances to obtain what may be termed as profitable "longer" term employment. In conversation with individuals it was reported that the costs of these temporary authorities are considered to be too high on a per trip basis.

The Alberta Transportation Annual Report for 1982/83 states that in the case of extra-provincial operating temporary authorities for motor carriers, 493 were approved and 24 were declined, which is approximately 5% of the total. These figures may be misleading in that once an

individual or company has, in their opinion, used their "quota" of temporary permits, they will not apply for a temporary authority. The MTB has been given the powers under the Motor Transport Act to grant the temporary authorities as the Board deems necessary.

The final form in this series is Form C with the proper title as follows: "Respondent's Statement in Objection to Extra-Provincial Application for Operating Authority Before the Alberta Motor Transport Board". This form requests name of applicant carrier, name of respondent and the person (position or capacity with firm) making representation on behalf of the respondent. With regard to the authority being sought the respondent must specify the part of the authority he is opposed to. The respondent must submit copies of his Alberta Operating Authority and indicate the portion of his authority which covers that sought by the applicant. The same applies for authorities from other jurisdictions.

The respondent must also list details of the type of tractors and trailers owned and leased, and type of equipment needed to fulfill the authority. This will give the MTB an indication if the respondent is able to handle the needs of the shipper with regard to the commodity. Respondents must list the volume of extra-provincial traffic sought by the applicant which the respondent moved himself during the previous year. In the same question respondents must list the names and addresses of shippers for whom shipments were moved extra-provincially. Information of this

nature helps the Board in deciding whether, or not the opposition is frivolous. In addition, the respondents are asked if they have been solicited for traffic from a shipper of the commodities herein opposed. If the service was not used by the shipper the respondent is given the opportunity to respond as to why they were not used.

As to their capability in performing the service, respondents must describe their ability to handle the traffic and the availability of their equipment to keep pace with the volumes. This is a question dealing with scheduling and utilization. Following this a conditional question on how the granting of the application will affect the respondent's business both directly and indirectly. The respondent is asked to explain briefly what may very well be an extremely complicated situation.

The next section deals with the appeals process for an applicant, respondent and intervenor to appear before a public hearing.

Appeals and Oppositions to Operating Authorities Found in the Operating Authority Certificate, Formal Public Hearing Order

In the case of a public hearing, procedures are found in the Motor Transport Act, however, before discussing the hearing procedures several definitions must be presented. There are several parties involved in a public hearing the first being the MTB whose typically broad powers are

described in the Motor Transport Act, Chapter M-20. There is the applicant who is the person applying for an operating authority. The intervenor is a person "who does not hold a valid and subsisting authority" which is in "whole or part coincidental with the certificate applied for by the applicant."[61]

An intervenor is also deemed to be a person "who wishes to make representation to the Board on the matter of the effect on the public interest[62] represented by the application."[63]

Another participant is the respondent who:

> " i) holds a valid and subsisting operating authority certificate issued by the Board that authorizes the operation of a public vehicle in whole or in part coincidental with the certificate applied for by the applicant.
> ii) whose interests may be affected by the granting of the application."[64]

Before an application is considered for a public hearing there are several requirements which were discussed earlier in the application forms for extra-provincial operating authority. The board, once satisfied with the application and supporting documentation shall:

> " (a) specify the exact wording of the application to be considered.

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[61] Government of the Province of Alberta, Motor Transport Act; Operating Authority Certificate Formal Public Hearing Order, Alberta Regulation 192/82, Queen's Printer, Alberta.
[62] See reference to public interest for an explanation of this term.
[63] Government of the Province of Alberta, Motor Transport Act; Operating Authority Certificate Formal Public Hearing Order, Alberta Regulation 192/82, Queen's Printer, Alberta.
[64] *Ibid.*

(b) set the date of the formal public hearing and
(c) cause notice of the formal public hering to be published in:
i) the "Operating Authority Bulletin" of the Alberta Trucking Association,
ii) the Alberta Gazette, or
iii) any other publication designated by the Board."[65]

With respect to the objection the Board directs:

" An objection shall:
(a) be in 4 copies;
(b) include
i) the name and address of the respondent and the address for service on the respondent in Alberta.
ii) a clear and concise statement of the grounds on which the application so opposed, and
iii) a copy of the applicable operating authority certificates held by the respondent in all jurisdictions."[66]

A copy of the objection must be sent to the applicant 15 days prior to the formal public hearing.

In the case of an intervention it shall:

"
(a) be in 4 copies
(b) include
i) the name and address of the intervenor and an address for service on the intervenor in Alberta, and
ii) a clear and concise statement of the nature and purpose of the intervention."[67]

A copy of the intervention is sent to the applicant in the same fashion as the objection. In the case of an objection and an intervention, the respondent and intervenor shall deposit $50 with the Board which may be refunded at the end of the hearing depending on how the Board has accorded costs.

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[65] *Ibid.*
[66] *Ibid.*
[67] *Ibid.*

Costs

The Board has the power to assess costs according to the following tariff:

> " (a) in the case of an applicant, costs of not less than $25 for each day or partial day of hearing, payable to each of the respondents and to the Provincial Treasurer;
> (b) in the case of a respondent, costs of not less than $100 for each day or partial day of hearing, payable to the applicant, and not less than $25 for each day of hearing payable to each of the other respondents and to the Provincial Treasurer;
> (c) in the case of the intervenor, costs of not less than $25 for each day or partial day of hearing payable to each person on whom, in the opinion of the Board, an adverse effect resulted from the intervention."[••]

These costs can be ordered paid to the Board if it deems that the:

> " applicant, respondent or intervenor as the case may be against whom costs are ordered, has unduly delayed the hearing, or whose conduct was frivolous or vexatious, or an abuse of the hearing process."[••]

Having the powers to levy these costs could help in reducing the incidence of frivolous interventions, objections and applications. In the case of a lengthy hearing the costs could be substantial not only in costs levied by the board but costs in terms of time and effort exerted by the participants. These costs are not explicitly mentioned in studies due to the difficulty in calculation reporting the cost of regulation. Bronson's cost estimates reported earlier give an example of costs both private and

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•• *Ibid.*
•• *Ibid.*

public in the regulatory process. In cases where a hearing is held jointly with the regulatory agency of another province the Board may alter proceedings as follows:

> " notwithstanding anything in the regulation, vary its procedures at public hearings to be substantially in compliance with the procedures applicable to the jurisdiction where the evidence is heard."[70]

In the case of out of province hearings, the 1982/83 Annual Report of Alberta Transportation supported only one joint hearing with the Saskatchewan Highway Traffic Board. Also during this year the Board held 49 regular informal hearings and 18 formal public hearings.[71] The following will show how the Board responded in 1982/83 with respect to the operating authorities discussed in this section.

Pertaining to intra-provincial operating authorities there were 2,665 new applications, 670 cancellations, and 5,751 renewals. Alberta intra-provincial trucking authorities consist of over 8,000 certificates. This number does not however translate into over 8,000 units available in Alberta for the transportation of commodities which are regulated. For example, where there is more than one vehicle operated under the authority of a certificate issued by the Board, the Public Service Vehicls Act states "a photostatic copy of the certificate carried in the vehicle shall be considered as compliance with this section".[72]

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[70] *Ibid.*
[71] Alberta Transportation, *Annual Report* 1982-1983.
[72] Alberta Regulations, Regulations Under the Public Services Vehicles Act, Queen's Printer.

With regard to extra-provincial operating authority for new carriers there were 228 approved, 50 deferred and 15 declined in 1982/83. Amendments to authorities in 1982/83 consisted of 466 approved, 106 deferred, 23 declined and 11 tabled. There were also 90 transfers and 169 cancellations. The above information can be found in the Alberta Transportation Annual Report 1982/1983.

Other activities of the Board in 1982/83 with respect to operating authorities are as follows:

> " 1) issuance of certificates for a three year period as opposed to one.
> 2) initiation and simplification of commodity description for operating authority issuance.
> 3) simplication of the requirements to file complimentary authority documentation for certificate review and operating authority renewals."[73]

The above changes were introduced to "streamline operations". The wisdom of issuing certificates for a three year period as opposed to one is questionable on grounds which are highlighted later in this discussion. Under the Motor Transport Act:

> " 1) No holder of a certificate may, without the permission of the Board, abandon or discontinue a service authorized under the certificate except as provided in the regulations.
> 2) The Board may from time to time review a certificate granted by it and if it is of the opinion that the authority conferred by the certificate has not been exercised or has not been fully exercised within a period of 6 months from the date of issue of the certificate, or during any period of 12 consecutive months, the Board may
> a) cancel the certificate if the authority was not exercised, or

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[73] Alberta Transportation, *Annual Report* 1982/1983, p. 50.

> b) amend the certificate to accord with the actual extent of the exercise of the authority."[74]

Given the extension of operating authorities to a three year period and the provisions of the Act as stated above, the Board's review procedures should be changed. The granting of a right for a three year period may reduce time on operational procedures for the Board but may lessen the incentives to an individual or companies to adhere to the authority without proper review procedures. The applicable section of the Act which states that "the Board may from time to time" review a certificate, seriously implies that no rules exist for review unless a violation of an operating authority is put before the Board. This could be interpreted to mean that an individual could be in violation of the certificate, under new procedures, for 2 1/2 years unless it is brought before the Board. The broad definition for authority granted under the certificate can be illustrated in the case of livestock. The definition under the Livestock and Livestock Products Act is as follows:

> " "livestock" means horses, cattle, sheep, swine, fur bearing animals raised in captivity, live poultry and bees.[75]

Given this definition a carrier who historically has dealt with cattle only in the past may oppose an application to haul live bees. There is an incentive to oppose such an

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[74] Motor Transport Act, Chapter M-20 Revised Statutes of Alberta 1980, Alberta Queen's Printer.
[75] Alberta Government, *Livestock and Livestock Products Act*, Chapter 2-24, Revised Statutes of Alberta, 1980, Queens Printer.

application on the part of the carrier within a subsisting authority (one which is current), given the definition of livestock and knowing full well that once an individual has authority to haul livestock he too can haul cattle under his new operating authority which includes all livestock. An individual with a subsisting authority may fear what may be termed as greater competition using the frivolous destructive competition argument. Under the current situation it is the applicant who must show why he should be granted authority in light of the oppositions put forth by both respondents and intervenors. Discussions with personnel at the MTB have elicited information regarding the changing of procedures to have the respondents and intervenors show why an authority should not be granted instead of placing the onus on the applicant to show why it should be granted. In reality this is a "fairer" situation and should speed up the granting of authorities. Given the above change, when and if it does occur, the respondents will be the ones justifying why an applicant should be excluded from the rights to operate in a given area and routes. Referring back to the cattle and bee example the respondent would have to know how the granting of an authority to an applicant will affect his primarily cattle hauling operation. Having the respondent show why an applicant should not be granted an authority would give the Board an opportunity to review the respondents activities over the past year, and in the case of the example above could well rule that the opposition is

frivolous and vexatious based on the hauling patterns of the respondent.

K. Recent Changes Proposed and Agreed Upon in Principle

The above agreement deals with an effort at the federal-provincial and territorial level to revise regulations and policy toward economic and administrative aspects of the Canadian trucking industry. Basically the various ministers have agreed to uniformity in both regulations and policies.

The economic aspects considered would be entry conditions, rates and the changing of "public convenience and necessity" to a more measurable method of evaluation. Also the creation of a Canada-wide listing of exempt commodities. These exempt goods for which "public convenience and necessity" would not be used, would be goods falling under several criteria. There criteria would be based on such things as the nature of the good (if it is perishable), seasonality of production and types of equipment (specialization).

Administrative aspects could be concerned with streamlining insurance and fee payment requirements. Other administrative changes could be related to the length of granting and operating authority, probably for an indefinite period. Overall the effects of the changes will reduce the regulatory cost burden and increase the efficiency of the motor carrier industry.

L. Summary and Conclusion

From the E.C.C. definition of regulation given earlier it is apparent that regulation affects the majority of activities in the Canadian economy. The transportation sector is no exception being currently subjected to "26 federal regulatory statutes and at least twice that number of provincial ones. It is also subject to thousands of pages of subordinate legislation, i.e. regulations."[74]

When considering regulations, it is important to distinguish between economic and non-economic. It is the economic regulations which have the greatest impact on the trucking industry. The majority of studies use Alberta as the competitive norm when measuring the economic effects of regulation on the trucking industry. These studies tend to support the fact that regulations do have an affect on the allocation of resources. The costs of these regulations have been institutionalized into the regulatory process. Entities such as the Tariff Bureau have been created to reduce the cost of compliance to regulation which as shown are still substantial in the trucking industry.

The effects of possible deregulation will have to be studied over a period of time on a regional level. There is a significant difference between major urban centers and secluded rural areas with regard to competition. The Calgary to Edmonton corridor has a high volume of trucking activity in all areas of trucking. Having trucking firms free to

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[74] Economic Council of Canada, *Responsible Regulation*, p. 22.

locate in the province of Alberta should give incentives to carriers to move from a highly competitive area to a less competitive area.

With regard to the application for an operating authority it is apparent that there is a need to review the procedures. The criteria for granting an authority relies on the principle of "in the public interest." The public interest question has not been answered and therefore it is unclear as to what contributes public interest.

III. Trucking Industry Responses

A. Objectives of the Questionnaire

The purpose of this chapter is to summarize the results from a questionnaire which was sent to truckers/assemblers who are currently or have been recently hauling hogs in Alberta, B.C. and the U.S. The list of trucker assemblers was supplied by the APPMB. There were also additional questionnaires sent to both assemblers and various auction markets in the hope of acquiring information relevant to their individual operations. Information gained from these operations could indicate size and capacity of the various feedlot/assembly yards.

The questionnaire was designed to identify several aspects of the trucking industry (see Appendix III). Each section of the questionnaire is discussed separately. There are five sections, each addressing specific concerns.

Section A of the questionnaire was designed to elicit responses on, for example, number of trucks, type, capacity and average number of miles travelled per year. Also in Section A the respondents were asked what the average length of hauls were for hogs only. Information from Section A would allow the construction of an inventory of vehicles and their capacities.

Section B required the respondents to answer questions on the utilization of their vehicles. These questions dealt with percent of utilization for hauling different types of

livestock, which would indicate the relative importance of hogs in trucking operations. Information on the percent of hauls at full load and the percent of trips with a back haul would give an indication of the utilization of livestock hauling units. Also in this section there was a question which requested respondents to list the types of goods most frequently back hauled. This would provide information on the types of goods for which these units may be used on a back haul.

Section C dealt with the types of services provided and the areas served by Alberta truckers. Information from the respondents would indicate the various types of services offered and the percent of a truckers business that provided these services involved. In order to construct a table to show where the majority of the truckers operations took place there was also a question in the section concerning areas of assembly and destination for hogs.

Section D of the questionnaire required responses on rates and costs. Information gained from this section of the questionnaire would aid in the construction of a rate schedule. This information once categorized by census division would show the variability of rates between census divisions. On the cost side, questions dealt with running cost per mile.

Section E gave the respondents an opportunity to offer comments on the future of their trucking operations and their opinion on the future of trucking regulations.

The construction of this questionnaire also provided the reseacher with the opportunity to develop and test a questionnaire, with individuals familiar with questionnaire design and experts in the trucking industry, thus developing additional knowledge of structure and conduct in the Alberta hog trucking industry.

B. Limitations of the Questionnaire

The response rate for the questionnaire was low. This problem was forseen by individuals at the APPMB and the probable outcome was openly stated in conversations with individuals in the trucking industry. It appears that current contentious issues within the hog industry, with respect to trucking, probably contributed to a reduced response rate. The move by the APPMB to purchase trailers and the support of emergency temporary authorities for cooperating truckers was viewed negatively by some members of the trucking industry. Also the recent announcement that federal and provincial governments are negotiating to have trucking regulations modified could have led to a refusal by potential respondents to fill out the questionnaire if they perceived the APPMB or the government were involved in this study.

By and large, it appeared that respondents were reluctant to participate in a survey which identifies rates, costs and areas served, even though respondents were assured that their responses would be kept in strict confidence. One

expert in the trucking industry revealed that truckers are reluctant to supply any information which they are not bound by law to provide. This is especially the case in Alberta where rates are not regulated and in the case of livestock, where rates are negotiated between the trucker and the producer.

There were 150 questionnaires sent to bonafide truckers as well as questionnaires sent to assembly yards and auction markets. Below are listed several observations partially explaining the low response rate.

1. The list included assembly yards and auction markets. The majority of these individuals do not offer trucking services but have individuals trucking from their yards.
2. Some of the respondents may have been one time haulers, or
3. Hogs could have comprised a small portion of the truckers overall livestock operation.

Individuals who fall in the 2nd and 3rd category from the above observations reported that their business was mainly in hauling beef. The responses were incomplete and offered only a brief note to explain why they could not fill out the questionnaire. Thus, it is quite possible that there are a number of potential respondents who did not complete the questionnaire for the above reasons. A follow-up letter failed to elicit further responses.

The survey elicited some strong negative reactions by respondents, in that eight questionnaires were sent back in the self addressed envelope with no correspondence whatsoever. The actions of these individuals may reflect their opinion of the questionnaire and the study.

In defence of the truckers, there were a number who were contacted by telephone and the feeling gained was that many of these individuals were busy running their operations and had very little time to fill out questionnaires, especially ones which did not appear to have obvious benefits to themselves. In retrospect, for further studies it is suggested that interviews with truckers be conducted through personal contact.

The 19 responses received were in most cases complete and offered many valuable comments which are reported in the comments section. These 19 questionnaires represent 13 percent of potential respondents, limiting the ability to fulfill the objectives stated earlier in this chapter. However, information from the questionniares, supplemented with data supplied by the APPMB on trucking operations were used to fulfill the objectives.

C. Alberta Pork Producers Marketing Board Data Used to Supplement Questionnaire Results

There are sections of the questionnaire which have been supplemented with APPMB data. For example, areas of assembly and destinations were derived from the list of trucker assemblers. The home address of the truckers would in the majority of cases reflect their area of operation and the destinations were recorded with the help of the sales office of the APPMB. In most cases the destinations of these truckers were either Red Deer or Edmonton. The number of extra provincial truckers and their destinations are also reported. These destinations are primarily B.C., Northern California or South Dakota which represent the majority of hogs leaving the province.

Due to the low response rate the question dealing with trucking rates were supplemented with APPMB data. The rates supplied by the APPMB were broken down into the respective census divisions and reported in Table III.4.

D. Results From the Questionnaire

Section A - Equipment

This section was designed to give an indication of the types and numbers of trucks and tractor trailer combinations used for hauling hogs commercially in Alberta. Basically there are three major types, each of which is further broken down into subgroups. These subgroups and their capacities

are listed in Table III.1. This table includes information pertaining to both short and long hauls. These trucks have different costs per mile and the rates charged for their use are quite variable.

It should be noted that approximately 45 percent of producers (those close to plants) haul their own hogs into plants, terminal yards and assembly yards.[7] The types of vehicles used by these producers vary from 1/2 ton trucks to converted school buses. This study implicitly assumes movement of hogs via commercial means. The producers who haul their own hogs incur basically the same costs as commercial operators using the trucks described in Table III.1. There is also an opportunity cost of hauling these hogs into markets. Producers who haul their own hogs would probably be incurring costs per unit which are higher than the commercial operators who, via greater utilization have a lower cost per unit.

Average Length of Haul for Hogs Only

This question was designed to discover the average length of haul by trucks and tractor trailer combinations. It is apparent that the larger units have progressively longer hauls. These results are as follows: straight trucks had average hauls of 45 miles (one way), while the tractor trailer combinations had average hauls of 346 (one way) miles.

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[7] Personal communication, Rod Buray, Alberta Pork Producers Marketing Board.

Table III.1

Truck and Tractor Trailer Combinations, Alberta, 1984

Type	Box Length (Feet)	Capacity' (Market Hogs) Single	Double	Triple
Straight Truck	12	15		
	14	25		
	16	35		
	20	45		
	21	48		
	22	52		
	23	55		
	24	58	105	
	30	65	110	
Tractor Trailer Combinations	50	120	200	
	54	130	210	
Possumbelly	45	100	185	220
	46	110	200	240
	50	178	218	265

' Capacities from questionnaire results and conversation with industry personnel.

Section B - Utilization

This section investigates utilization of the units involved in hauling hogs in Alberta both interprovincially and internationally. Table III.2 reports the average percentage of units which are used for hauling different types of livestock. This table shows that hogs are in most cases secondary to beef in use of the units available to transport livestock. In the case of the tractor trailer combinations hogs comprise approximately 30 percent of overall use for these units. This would reflect the comments of several respondents who reported that hogs comprise such a small portion of their operation that they would not complete the questionnaire. With this in mind the 30 percent rate reported could be somewhat high. It is beef cattle which comprise the majority of livestock transported in Alberta as represented by 67 percent in Table III.2 The "other livestock" category refers exclusively to sheep.

Percent of trips at full load

This question was designed to report the percent of hauls at full load as opposed to less than full load. In the case of tractor trailer combinations the respondents reported that in most cases all trips are at full load. This would reflect the APPMB efforts to have these units fully utilized when they leave the Board terminal yards. The majority of these large units operate out of terminal yards and assembly centers in the province which make greater

Table III.2

Average Percentage Use for Units Hauling Hogs, Beef and Other Livestock, Alberta 1984'

	Trucks	Tractor Trailer Combinations
Hogs	52	30
Beef	55	67
Other	3	3

' Data derived from questionnaire results.

utilization possible.

The responses pertaining to trucks indicate that 67 percent are at full loads. This reflects the fact that the majority of straight trucks assemble hogs by travelling from farm to farm.

Percent of total trips with back hauls

In the case of livestock hauling units the potential for a back haul is reduced due to such restrictions as health regulations and the limited number of goods for which a livestock trailer can be used on a back haul.

Respondents answering this section of the questionnaire (16) reported between 0 and 75 percent of their trips having a back haul. The majority of respondents had between 15 and 25 percent of their trips with a back haul. The average percent of trips with back hauls was 17 percent. Industry sources report that a back haul rate of 30 percent would be considered as reasonable in the livestock hauling industry. With the low back haul rate described above, rates tend to be based primarily on the forward haul. In other words the forward haul reflects the round trip rate. This observation does take into account the fact that the back haul in essence has a marginal cost of zero due to the fact that the trucks return whether empty or full. Truckers can charge back haul rates at a percent of the forward haul or charge a rate on a forward haul which compensates for the lack of a back haul.

This is the section of the questionnaire which was pointed out by one extra provincial trucker as being potentially misleading. In the case of extra provincial movements the majority of trade moves north to south with little opportunity for a back haul for carriers in the livestock business. Essentially, the nature of the equipment limits what can be back hauled from the U.S.. This particular carrier, with both intra and extra provincial operations, reported that intra-provincially the operation has a high percent of back hauls (mostly cattle). Their extra provincial (international) operations have virtually a zero back haul rate from the U.S.. When one considers the number of miles intra-provincially as opposed to extra provincially the extra provincial miles comprise the majority of miles travelled.

It was pointed out by one respondent that American carriers in the extra provincial hauling of livestock return to the U.S. with a full load on their back hauls. The U.S. carriers deliver livestock or other allowable goods on their forward hauls to northern states, cross the border and pick-up a full load of hogs or peat moss on the back haul. These carriers are able to base rates on a full round trip which translates into greater utilization of the unit. These back haul rates would be a percent of their forward rates. This reflects what was stated earlier in the discussion of the marginal cost of a back haul. The back haul rates would be flexible downward due to competition for these hauls.

The immediate concern for the Canadian carrier is the fact that his front haul is the U.S. carriers' back haul and there is a limited opportunity for a back haul which forces the Canadian carrier to meet the U.S. carriers' rates.

There were other concerns dealing with road tax and the fuel tax paid by Canadian carriers in the U.S.. One respondent reported U.S. carriers in Alberta do not pay a fuel tax. Conversely, the tax paid by Canadian carriers in the U.S. further hinders their ability to compete with U.S. carriers. The current exchange rate has intensified this problem due to the fact the tax must be paid in U.S. currency.

Types of goods most frequently hauled back and the percent of distribution

The types of goods most frequently hauled back by respondents was livestock. There were 61 percent of respondents with back hauls (11 of 18). Back hauls consisted of 36 percent fat cattle, 45 percent feeder cattle and the remaining products were feed and feed concentrates. This narrow group of products (cattle and feed) reflects the limited use of specialized trailers in the livestock hauling industry. In addition to the physical limitations, health regulations also restrict the use of these units.

Part C - Service Provided and Areas Served

The first question in this section dealt with the method of pick-up which is indicative of where the respondents carried out the majority of their business.

In Alberta hogs are picked up at several different locations. Basically there are pick-ups by travelling from farm to farm, assembly yards, APPMB terminal yards and stockyards.

All of the above mentioned methods for pick-up were utilized by respondents. There were 12 respondents who reported that they pick-up hogs from farm to farm. The majority of these respondents answered that 100 percent of their operations consisted of this method. Consequently, farm to farm assembly ranged from 2 percent to 100 percent with an average of 64 percent for this type of collection.

The assembly yard pick-up method had 7 respondents. Respondents reported that from 20 percent to 100 percent of their operations were carried out in this manner. The average percent of total operations in this category was 68 percent.

There were 2 respondents who reported pick-up at APPMB terminal yards. These individuals report 90 percent of their business was conducted from these yards.

Stockyard pick-up had 2 respondents having an average of 87.5 percent of their business originating at stockyards. The total number of respondents in section C of the survey exceeds the total number reported for the survey. This is

due to the fact that several respondents carried out more than one type of pick-up.

Pick ups from farm to farm had the greatest number of respondents with the greatest variation in percent of operations in this category. In this case respondents were using straight trucks which reflect the nature of this type of pick-up.

Other methods of pick-up involve the utilization of the tractor trailer combinations. There was one respondent with a tractor trailer combination who reported he would not pick up at the farm gate unless a full load could be assembled. This reflects both the need to have the units fully employed and the specialized nature of these units.

One survey question inquired as to whether or not the respondents owned or operated a hog assembly yard. There were four respondents who simply reported that they own an assembly yard and have no trucking interests. These individuals did not complete the section on assembly yards and therefore, capacities were not recorded. Six respondents reported owning or operating assembly yards with capacities which varied between 140 and 400 hogs. The average capacity was 228 hogs which constitutes a full load for tractor trailer combinations. Under these conditions, local producers deliver hogs to assembly yards and once a full load is assembled the hogs are moved by truck to packing plants.

In most cases the assembly yard and trucking operation are complimentary. The trucker/assembler would own both operations, thus allowing greater utilization of the larger more specialized units.

The main area(s) in Alberta in which the majority of respondent's business takes place

Question 2c due to lack of response will not be addressed in the form presented in the questionnaire. Alternately, a table will show the number of potential truckers operating in an area, the data for which was supplied by the APPMB. It has been pointed out that in the majority of cases, the mailing address of truckers is synonymous with their place of business. The destinations were recorded by the APPMB sales office, indicating where the majority of hauls terminate. The table reflects Alberta operations only and in most instances the destinations were Edmonton, Red Deer and Lethbridge. Extra provincial haulers negotiate with the APPMB and their loads are assembled at the board terminal yards or large assembly yards.

Table III.3 functions as an indicator of trucking services available in an area. The table does not report the number of trucks owned by each firm. However, in most cases there is a single owner operator. The table does include one time haulers and those that haul hogs infrequently. These infrequent haulers concentrate the majority of their operations in beef hauling.

Table III.3 also reports hog production from each census division, based on dressed weight settlement, and the number of truckers hauling hogs from these census divisions. The percentage of trucks in each census division relates to the percent of hogs for that region. Census divisions with large supplies of hogs are served by relatively larger numbers of trucking firms, given that truckers are free to operate throughout the province of Alberta if they have an operating authority. This allows truckers to operate in census divisions other than those designated by the mailing address. The table does indicate the potential number of truckers hauling hogs in each census division.

The total number of trucks in a census division with an operating authority to haul hogs, are not recorded in this table. As stated earlier, livestock operating authorities include all domestic livestock. Therefore, all truckers hauling beef in a census division also are allowed to haul hogs under the provision of their operating authorities.

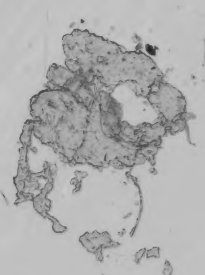
Census divisions with few reported rates, which in turn translates into few trucks available for hauling hogs would tend to exhibit little in the way of workable competition. These areas comprising the fewest potential truckers, as reported from the list provided, tended to have the highest average rates. In addition, comments received from respondents emphasized the lack of competition which may provide the possibility for collusive behaviour. This would not reflect a competitive situation and rates would be set

Table III.3

Hog Trucking Operators by Census Division in Alberta 1984

C.D.	Number Hogs	% of Hogs	Number of Operators	% of Total
1	23,935	1	5	3
2	176,060	11	15	7
3	48,857	3	3	2
4	24,649	1	4	3
5	142,678	9	9	5
6	97,489	6	10	6
7	106,094	6	12	7
8	295,503	18	19	12
9				
10	215,936	13	25	15
11	188,689	11	17	10
12	92,346	6	16	10
13	188,364	11	18	11
14	12,435	1	2	1
15	52,457	3	14	8

Source: Data supplied by APPMB.



at a level which would discourage truckers from other areas from moving in. Truckers would be reluctant to travel numerous dead miles, making the trip to a different census division unprofitable. Also, once a trucker locates in a census division with few participants it would be in his interest to maintain the status quo.

There were 24 trucking firms identified for extra provincial trucking, 11 of which also transport hogs intra provincially. The majority of their national and international hauls originate from Lethbridge and Calgary which comprise 70 and 20 percent respectively. The remaining 13 trucking firms identified for extra provincial hauling are based in B.C.(9) and Saskatchewan (4). Trucking firms having U.S. origins were not identified on the list supplied by the APPMB.

Section D - Rates

This section of the questionnaire was aimed at identifying rates. The trucking rates were supplied from a list which documented trucking rates charged by truckers hauling hogs for producers and the APPMB. These rates, in most cases, were for hauling a cwt. dressed and subsequently converted to a per hog basis. In order to calculate the length of hauls by the majority of these truckers it was necessary to use their mailing addresses as the origins and destinations were supplied by the sales office of the APPMB. These figures also allowed for the construction of a rate

schedule which was employed in the transportation model. This information was used to group the reported rates into census divisions. These rates and the frequency for which the rates appear from the list appear in Table III.4. This does not represent the total number of truckers in an area for two reasons.

1. Not all truckers from the master list hauled for producers or the APPMB over the period covered by the rate list.
2. Some truckers had more than one rate.

In reviewing Table III.4 the rates given would in most cases be those which apply to the nearest demand node, thus being consistent with the destinations given by the sales desk. In this light there are tentative observations which can be made with regard to competition and rates. The census divisions for which there are a large number of rates recorded tend to have lower average rates, as well as being relatively close to the destination recorded by the APPMB. For example, CD's 10, 11, 12, 13 would be serving the Edmonton market. Accordingly, average rates in CD 11 are lower than those in CD's 12 and 13, partially reflecting nearness to market.

Total costs per running mile/km by truck type

This question elicited 8 responses for the tractor trailer units and 6 responses for the trucks. Four of the respondents had both truck and trailer combinations. Several

Table III.4

Average Dressed Hog Transportation Rates by Census Division, Alberta, 1984

C.D.	Ranges	Pick Up Rates		Ranges	Transportation Rates	
1	Average	.50		Average	1.82	
	High			High	2.40	
	Low		N=1	Low	1.47	N=4
2	Average	.71		Average	1.50	
	High	.97		High	1.61	
	Low	.60	N=4	Low	1.40	N=6
3				Average	2.37	
				High	2.75	
				Low	1.90	N=3
4				Average	3.00	
				High		
				Low		N=1
5	Average	.74		Average	1.22	
	High	1.47		High	1.75	
	Low	.40	N=4	Low	.92	N=4
6	Average	.50		Average	1.40	
	High			High		
	Low		N=1	Low		N=1
7	Average	.61		Average	1.40	
	High	.75		High	2.00	
	Low	.50	N=5	Low	.60	N=9
8	Average	.61		Average	1.27	
	High	.85		High	1.75	
	Low	.40	N=5	Low	.90	N=6
10	Average	.52		Average	1.41	
	High	.88		High	1.90	
	Low	.40	N=7	Low	.50	N=20
11	Average	.61		Average	1.17	
	High	.73		High	2.00	
	Low	.40	N=6	Low	.50	N=14

Continued ..

Table III.4 Continued

C.D.	Ranges	Pick Up Rates		Ranges	Transportation Rates	
12	Average	.66		Average	1.85	
	High	1.17		High	2.90	
	Low	.50	N=6	Low	1.45	N=12
13	Average	.77		Average	1.62	
	High	1.47		High	3.00	
	Low	.40	N=7	Low	1.25	N=19
14	Average	.40		Average	1.45	
	High			High	1.50	
	Low		N=1	Low	1.40	N=2
15	Average	1.17		Average	2.50	
	High			High	3.60	
	Low		N=1	Low	1.75	N=8

Source: Data supplied by the Alberta Pork Producers Marketing Board

respondents stated that the costs were either not known or that the data was not available.

The total costs per running mile were varied in the case of straight trucks, a situation which is not unusual, considering the variety of trucks in this class. The average for total costs in the straight truck class was 56 cents per mile. The highest cost reported was 95 cents and the lowest 25 cents. A total cost of 25 cents per running mile, being lower than the reported average, is in most cases not realistic. The total running costs per tractor trailer units were less variable, averaging 97 cents per mile, with the high rate being $1.32 and the low rate of 60 cents. Total running costs of 60 cents per mile should be viewed as being low, as in most cases the reported cost was $1.00 per mile.

E. Comments Received By Respondents

In this section of the questionnaire respondents were asked if they planned on increasing, decreasing or keeping fleet size constant in the near future. Here, there were 14 respondents, seven of whom stated that they plan to keep their current fleet size constant. Only three respondents indicated that an increase was planned in fleet size, while four respondents anticipated a decrease in fleet size in the near future.

Respondents were given an opportunity to comment on regulations and other concerns in the trucking industry. In many cases the responses are related to the subject of fleet

size. Below the comments are recorded in most cases word for word.

Comments Received

"No need for further regulation."

"Remove tax on U.S. built trailers."

"We do not want any more regulations."

"We are in favour of deregulation but done according to an approved plan and in an orderly fashion with participation and impact from the trucking industry."

"There is not a large volume of livestock to haul in this area."

"Some large companies are gaining a monopoly position in some areas by losing money in one area and making up the loss in another area at the expense of the local trucker."

"Because we are hauling for farmers I think there should be a discount on fuel prices. I also think the operating authority we have isn't worth the paper it is written on, it should be the same as B.C.. I would like to see tractor trailer rates set (this may stop scabbing)."

"There is a definite lack of competition in this area for trucking companies hauling livestock and they charge whatever they feel like."

"We are in favour of total deregulation, so as to let the trucking industry get on with the business it is supposed to do. With the government getting in on the act, they've over regulated everything. Total deregulation would allow the strong to survive and you know the rest."

"Too many temporary extra provincial permits given to truckers to haul the product we can. These people have to cut their rates to get our customers, therefore they cannot maintain their equipment properly."

The above comments encompass the diversity of concerns from members of the trucking industry. Key areas of concern are regulation, both for and against. These opinions point to the necessity for further studies in deregulation once the current regulations are changed as agreed upon between provinces and the federal government.

F. Summary and Conclusions

The objectives of Chapter III were modified to take into account the low response rate. Additional data supplied by the APPMB were used to fulfill these objectives.

In the equipment category a table was constructed to show the types and capacities of equipment available to haul hogs. There are many subdivisions within different types of trucks and trailers.

The average length of haul for the above described units was 45 miles for the straight trucks and 346 miles for the tractor trailer combinations. The difference reflects the specialization of the large tractor trailer units.

In Table III.2 the average use of units for different types of livestock show hogs in most cases are secondary to beef. The estimates given in Table III.2 underestimate the percentage for beef in that only truckers hauling for the

APPMB were surveyed. There are many truckers in Alberta who haul beef only.

Responses dealing with the utilization of units show that straight trucks operate at less than capacity (on average), while the larger tractor trailer combinations are more fully utilized. The APPMB makes efforts to have these units fully utilized on hauls leaving their terminal yards. In this section of Chapter III issues pertaining to back hauls were raised and statements from truckers were reported. The back haul for livestock units is limited and this is supported by the low back haul rates reported by respondents. The average percent of trips with a back haul was 17, which is low based on conversation with experts in the trucking industry.

Reviewing methods of pick-up show that truckers use their straight trucks in areas where the farm to farm method prevails. The other methods of pick-up use the large, more specialized units, which is directly related to the volumes of hogs available at these locations. For example those truckers who owned or operated an assembly yard would be able to assemble a full load for the large tractor trailer units. Thus, these assembly yards compliment the trucking operation.

Due to the lack of response it was not possible to make meaningful observations on levels of competition in areas of the province. In order to fulfill this objective it was necessary to use APPMB data which allowed the constructon of

Table III.3, showing the potential number of truckers in a given area. The percent of truckers in an area was compared to the percent of hogs produced from that area, and in the majority of cases the percent of truckers reflected the percent of hogs. Areas of high hog production were synonymous with a relatively large percent of potential truckers.

Section D of the questionnaire dealt with rates and costs. In the case of costs it was reported by several respondents that either they did not know the costs for operating their trucks or that the data was not available. Straight truck costs averaged 56 cents per mile while tractor trailer costs were 97 cents per mile.

Table III.4 depicts average rates by census division. In census divisions with a large number of trucking rates (reported from a list supplied by the APPMB) the average rate is lower than those with few rates reported. These census divisions are the ones closest to the major demand nodes in the province of Alberta, therefore distance would have a large effect on rates charged within the division. The rates from the census divisions close to the demand nodes show a range from $1.17 to $1.85 per cwt for delivery to the closest demand node.

In the future and comments sections there were differing opinions on deregulation and other concerns ranging from cost of fuel to "scabbing" in the trucking industry.

With respect to fleet size in the near future the majority of truckers responded that they plan to keep fleet size constant. Those reporting an increase in fleet size were the truckers in favour of deregulation. The ones reporting constant and decreasing fleet size in the near future were in most cases against deregulation.

IV. Model Results

A. Introduction

This chapter introduces linear programming, the tool used for minimizing hog transportation costs in Alberta, and presents the results from the model along with the actual hog transportation costs. This chapter also discusses the data requirement with respect to supply, demand, routes chosen and the development of the rate schedule used in this study.

B. The Linear Transportation Problem

The transportation problem, as a form of the linear programming problem, can be solved using the linear programming simplex method.

The classical transportation problem determines the optimal schedule of shipments which have the following characteristics:

> a. "originate at sources (supply depots) where fixed stockpiles of a commodity are available
> b. are sent directly to their final destinations (demand depots) where various fixed amounts are required
> c. exhaust the stockpiles and fulfill the demand, hence, total demand equals total supply, and finally, the costs must
> d. satisfy a linear objective function; that is, the cost of each shipment is proportional to the amount shipped, and the total cost is the sum of the individual costs"[78]

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[78] *Dantzing, G., Linear Programming and Extension,* (Princeton University Press, 1963), p. 299.

The problem addressed in this study is to minimize transportation costs between fixed demand modes and a fixed number of supply modes. This will involve analyzing a short run situation over a one year period, January 1, 1984 through to December 31, 1984.

There are certain necessary conditions which are described as follows:

1. Transportation rates on average, will depend on distance travelled. This will allow the construction of a road mileage matrix which presents costs for moving a hog on a per mile basis.
2. Transportation rates used are an average of the commercial rates reported by the APPMB and Alberta Agriculture Custom Rates Survey. This was necessary since it was not possible to separate the different types of trucks and trailers used for handling hogs.
3. Demand for hogs equals supply of hogs in the model. One valid reason for this relates to the storage of hogs which is not practical for long periods of time (shrink), as this imposes costs on producers and would disrupt their production process.

The cost function to be minimized is as follows:

$$\text{Minimize } \Sigma_i \Sigma_j c_{ij} X_{ij}$$

subject to:

$$\Sigma_j X_{ij} \leq a_i \qquad (i = 1,2, \ldots, n)$$

$$\Sigma_i X_{ij} = b_j \qquad (j = 1,2, \ldots, m)$$

and $$X_{ij} \geq 0$$

Where there are n locations (supply nodes) in which quantities a_i (i = 1,2, ..., n) of a homogeneous item (hogs) are available for shipment to m other locations (demand nodes) each of which requires a quantity b_j (j = 1,2, . . ., m). Note that the total required $\Sigma_j b_j$ is greater than and/or equal to $\Sigma_j a_i$ which is the total available where c_{ij} is the cost of shipping one unit from origin i to destination j.

The minimized transportation costs were calculated via the linear programming model. The volumes for the supply nodes have been calculated using a computer program which sorted APPMB settlement number data by postal codes. The demand at the packing centers and U.S. destinations is fixed using the 1984 figures. The model will allocate the hogs from supply centers to the nearest demand node so as to minimize the transportation costs.

C. Sources of Data

Demand

As mentioned earlier in this study total hog demand equals total hog supply less one hog. This is a variation of the requirments of a traditional transportation model. Having supply less than demand by one hog was necessary due to the requirements of the computer package used to solve the linear programming problem. The IBM 360 using the MPS program, which due to rounding procedures presented an

infeasible solution. By having supply less than demand a feasible solution was obtained.

In this study the selected demand nodes are the established packing plants in Edmonton, Calgary, Red Deer and extra provincial shipments to selected U.S. destinations (South Dakota and Northern California) and B.C. The demand for Alberta hogs is presented in Table IV.1.

Table IV.1 shows demand from the six points chosen as demand nodes. The production data supplied by the APPMB shows settlement numbers (hogs slaughtered in Alberta) which vary slightly from the numbers demanded. This difference was just slightly over 1 percent. It was explained that the difference between the sales desk and settlement totals are due to the delivery by producers of more than the totals phoned previously into the sales desk. For example a producer will phone in that he has 10 hogs to sell and delivers 11. This difference of 54,203 hogs which shows up on the settlement sheet, was pro-rated to the demand nodes by taking the percent of total for each demand node and multiplying that percent by the 54,203 hogs. For example, shipments to B.C. represented 11% of total demanded which translates into 5963 hogs of the 54,203 difference reported.

Table IV.1 shows that Edmonton processors required the greatest number of hogs (792,353 or 41% in 1984). The Red Deer processor received 477,059 hogs or 24% of the 1984 production. Shipment to the U.S. totaled 284,617 hogs which is 15% of total production. The remaining 21% of 1984 hog

Table IV.1

Hog Demand' (1984) for the Six Demand Nodes Used in this Study, Alberta 1984

	Number of Hogs	% of Total
Edmonton	792,353	41
Red Deer	477,059	24
British Columbia	177,440	9
Northern California	56,924	3
South Dakota	227,693	12
Calgary	218,639	11

' Data supplied by the Alberta Pork Producers Marketing Board records.

production was sent to Calgary and British Columbia processors which comprised 12% and 9% respectively.

Supply

Supply data were obtained from APPMB settlement numbers. The data were aggregated by census divisions and then segregated by county, municipal districts, special areas and improvement districts. This involved the classification of 492 identified cities, towns and hamlets into their respective areas. Once coded and then entered into the computer, the totals for each area were calculated. The totals for the counties, municipal districts, special areas and improvement districts are presented in Table IV.2. Table IV.2 also shows totals for the census divisions.

The criteria for choosing the supply locations were based on area covered and volumes. In most cases a town was selected if it was 1) central, and 2) had a large volume of hogs. This follows closely the methods used by Dawson in choosing supply nodes.''

D. Transportation Matrix

The transportation cost matrix includes the cost of transporting a live hog between all origins and all destinations. To calculate the above costs road mileage between all demand and supply nodes, trucking rates and

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'' Dawson, J., "Hog Assembly Centres: Alberta Locations Analysis," (unpublished M.Sc. Thesis, University of Alberta, Department of Rural Economy, 1971), p. 50.

Table IV.2

Hogs Dressed Weight Settlements by Subdivisions', Alberta
1984

	Number Hogs	Subdivision	Number Hogs	Supply Nodes Chosen
CD1	23,935	CTY 8	10,708	Foremost
		ID 1	5,743	Medicine Hat
		Medicine Hat	7,484	
CD 2	176,060	CTY 4	43,347	Brooks
	375,293[2]	CTY 5	28,165	Warner
		CTY 26	47,314	Lethbridge
		Lethbridge (199233)[1]	217,712	
		MD 14	38,755	Vauxhall
CD 3	48,857	MD 6	20,519	Cardston
		MD 9	3,454	Pincher Creek
		MD 26	24,884	Claresholm
CD 4	24,649	SA 2	10,778	Hanna
		SA 3	9,591	Oyen
		SA 4	4,280	Consort
CD 5	142,678	CTY 2	22,468	Vulcan
		CTY 16	20,639	Strathmore
		MD 47	8,528	Morrin
		MD 48	74,291	Threehills
		ID 7	16,752	Drumheller
CD 6	97,458	MD 31	20,619	High River
	154413[2]	MD 44	25,629	Calgary
		Calgary (56924)[1]	14,905	
		CTY 17	36,336	Didsbury
CD 7	106,094	CTY 6	30,974	Stettler
		CTY 18	14,052	Castor
		CTY 29	23,703	Killam
		MD 52	11,811	Czar
		MD 61	25,554	Wainwright
CD 8	295,503	ID 10	9,644	Rocky Mtn House
	301,195[2]	CTY 3	37,607	Ponoka
		CTY 14	141,570	Lacombe
		CTY 23 (5,692)[1]	75,742	Innisfail
			36,632	Red Deer

Continued ...

Table IV.2 Continued

	Number Hogs	Subdivision	Number Hogs	Supply Nodes Chosen
CD 10	215,936	CTY 9	28,730	Holden
		CTY 21	18,563	Two Hills
		CTY 22	74,956	Camrose
		Lloydminster	2,919	Vermilion
		CTY 24	45,787	
		CTY 27	23,701	Vegreville
		CTY 30	21,280	Lamont
CD 11	188,689	MD 90	45,038	Morinville
	211,459[2]	CTY 20	15,398	Sherwood Park
		CTY 25	35,161	Thorsby
		CTY 31	72,141	Edmonton
		(22,770)[1]		
		CTY 10	43,721	Wetaskiwin
CD 12	92,346	CTY 13	14,433	Smoky Lake
		CTY 19	60,513	St. Paul
		MD 87	13,440	Bonnyville
		ID 18	3,960	Lac La Biche
CD 13	188,364	CTY 7	9,738	Thorhild
		CTY 11	115,014	Barrhead
		CTY 12	10,679	Athabasca
		CTY 28	13,980	Sangudo
		MD 92	38,953	Westlock
CD 14	12,435	ID 14	6,150[3]	Edson
		ID 15	6,285	Whitecourt
CD 15	52,457	CTY 1	17,255	Grande Prairie
		ID 16	9,268	Valley View
		ID 17	9,254	High Prairie
		ID 19	4,100	Eaglesham
		ID 21	1,295	Hines Creek
		ID 22	2,299	Manning
		ID 23	3,400	High Level
		MD 133	1,274	Spirit River
		MD 135	1,038	Grimshaw
		MD 136	3,274	Fairview

[1] Numbers in brackets represent totals for U.S. shipments. Data supplied by APPMB and conversations with Rod Buray.
[2] Census division totals plus U.S. totals.
[3] Includes CD 9 total of 306.

volumes supplied at each supply node were required. Mileages were calculated from road maps and a mileage matrix supplied by Travel Alberta giving mileages to Edmonton from all points in Alberta. Another mileage source was the Alberta Trucking Association Directory. Once completed the matrix results show the cost of shipping one hog from the supply nodes, to the demand nodes.

Routes Chosen

The criteria for specifying the routes for the movement of hogs were as follows:

1. The shortest route in most cases was chosen. This was done by following primary highways in Alberta.
2. In the case of Edmonton and points North the mileage to the demand node in B.C. was calculated via Jasper using highway 16 to highway 5 in B.C. Discussions with several dispatchers from Edmonton based firms pointed out that this route was the shortest and has fewer towns to pass through.
3. The mileage from points South of Edmonton was routed via Calgary to B.C..
4. The U.S. destination routes were the shortest via Lethbridge. Border crossing times also affect the routes taken by the trucks. Given the nature of the product a delay at a border crossing (overnight) is not practical.
5. In the case of Northern California the Edmonton and points North were routed through B.C.. Points South were

moved through Lethbridge.

6. In Southern Alberta the route to B.C. was either Calgary via Rogers Pass or Lethbridge via the Crowsnest Pass.

Rate Schedule

The rate schedule employed in this study was constructed by taking the rates for over 100 carriers (supplied by the APPMB) and recording the mileage and rates/cwt to Edmonton and Red Deer. Frequency of rates diminished as one moved away from the centers. That is, fewer carriers were recorded as the distance from the center increased. This implies the use of more specialized units as distance increases. It was for this reason that a rate of $2.75 per loaded mile was used (based on a full load) for loads in excess of 400 miles. Shorter trips used rates based on the average rates for all types of trucks and trailer combinations. It was not possible to disaggregate the rates by type of truck from the data supplied by the APPMB. In most cases pick-up charges were listed separately by the carriers, making the calculation of the average rates easier. In cases where pick-up assembly charges were low, transportation rates tended to be high, although the opposite was also true in some cases. With this in mind one should be cautious in the use of the same rates for shorter hauls. The longer hauls reflect the charge per loaded mile of $2.75. The rate schedule itself is presented in Appendix IV.

E. Limitations of the Model

The model used in this study minimizes the transportation costs for hogs produced in Alberta and sold nationally and internationally. Since the hogs required at demand nodes and hogs supplied at supply nodes were defined in units of hogs per year, (January 1 - December 31, 1984) the model results incorporate the assumption that demand and supply on a daily basis are uniform over the number of marketing days. For example, if there are 245 marketing days in a year, each day in the model would represent 1/245 of the total yearly marketings. In fact daily occurances do not exhibit the even flows which are used in a yearly model. The results of the model represent the minimum cost of transport if hog supply could be uniformly scheduled over the year and matched with a uniform demand.

The realities of the market mean that the above is impossible. The model does provide a measure of the relative magnitude of savings in transportation costs available if strategies were implemented that minimized transport of hogs to demand nodes as shown by the model. Some of the marketing considerations faced by the APPMB are reported in this section.

Not having supply management powers the APPMB has little control over the number of hogs marketed from any one supply point on any given day. The APPMB must make efforts to accommodate all hogs offered for sale on a particular day. On the sales side, the satisfied demand of the packers

may vary, forcing the APPMB to hold these hogs or send them to alternative markets. For example, if the Edmonton area supply exceeds the demand from the local plant, this in turn would force the APPMB to hold these hogs or move them to an alternate demand node. In this case the options would be (1) to move the hogs to Red Deer if they can be absorbed without disrupting supplies in this area; (2) sell the excess hogs in B.C. or the United States. Following this procedure on a daily basis, the sales office would be minimizing transportation costs based on the totals offered for sale and total satisfied demand from the demand nodes.

In order to show minimum transportation cost on a daily basis it would be necessary to have daily offerings from the supply nodes and daily demands from the demand nodes. This data would be placed in the transportation model daily and the results could be used to show how minimum daily transportation costs could be achieved.

F. Marketing Considerations

The following lists several marketing considerations which impact on the operation of the APPMB. It will be shown in this chapter that operationally the APPMB is very close to the model results which minimize cost. The following considerations would explain a major portion of the differences between the model results and actual costs.

In the last six months of 1984 Alberta weekly hog exports were in the order of 10-12 thousand hogs per week,

which was in excess of packer demands. The requirement to move this volume equalled up to 60 loads per week. Given this volume, coupled with truck availability as well as the location of available trucks, was crucial to the selection of hogs for the export market.

The U.S. market demands a heavier hog. In order to fulfill this demand it was necessary to route hogs through Board terminals to segregate producer's hogs which meet the U.S. market specifications. There were attempts to have assemblers sort hogs for export but the assemblers failed to sort consistently the hogs required for export markets. The logistical problem of assembling hogs for export is further complicated by the need to establish specific weights for each producer whose hogs are sold into the export market. Hogs sold through private assemblers or truckers and mixed with other producer hogs for which there is no liveweight established on a producer basis are not capable of settlement on an export basis and therefore not exportable. Mixed loads coming from private assemblers and truckers for which no such liveweight identification and determination exists must be allocated and settled on a rail grade basis in the domestic market.

For the purpose of settlement on export hogs sold liveweight, producers are paid the daily Alberta pool price on a carcass yield of 78.5% of the scale weight upon delivery to the Board assembly yards or any other assembly yard authorized by the Board to weigh hogs for export

settlement. Producers who have sold twenty or more hogs on a rail grade basis in the previous three months receive their average index over this period on their liveweight settlement. Producers who market less than twenty hogs receive the Alberta average index over the previous three month period.

As a result of this policy, it is necessary for producers to periodically market a portion of their hogs to a Canadian plant. Making allowances for sorting on those hogs that do qualify for export, a minimum of ten percent of a producer's hogs in an export location would likely be compelled to be sold in the domestic market.

One final consideration which affects hog marketing is shrink. The decision between holding a hog and the cost of shrink which occurs may be greater than moving the hog to market.

G. Model Results

The transportation model used in this study minimized the transportation costs from the 62 selected supply nodes to six demand nodes. The demand nodes are located in Edmonton, Red Deer, Calgary, British Columbia, Northern California and South Dakota.

Totals for demand and supply were set to be equal, as required by the transportation model, however due to rounding procedures used by the computer it was necessary to have supply exceed demand by one hog to avoid the outcome of

an infeasible solution. The solution procedure used in this study is for the standard linear programming problem.

This model does not differentiate between hogs settled on a live weight basis and those on the settlement sheets which are on a dressed weight basis. Basically what is presented is "a hog is a hog" whether live or dressed. The dressed weight basis includes hogs which are marketed at the packing plants, however, it is still counted as one hog on the settlement sheets. This would also be reflected in the rate schedule which reported transportation costs per hog.

Essentially, the model depicts the minimized transportation costs for all hogs produced over a one year period from January 1, 1984 to December 31, 1984. Hogs destined for the U.S. were supplied from four supply nodes, Edmonton (8%), Red Deer (2%), Calgary (20%), and Lethbridge (70%). It was not possible to trace the origins of these hogs because they do not show up on the dressed weight settlement sheets. The percentages showing the distribution points for these hogs were supplied by the APPMB sales office. In order to minimize total transportation costs the computer did not allocate hogs from Edmonton, Calgary or Red Deer to the United States. However there were 199,233 hogs placed in Lethbridge which comprises 70% of the total number of hogs destined for the U.S. All of these hogs were allocated to South Dakota which is 87 percent of the hogs sent to South Dakota. Results from the model were reported by demand node to show the least cost transportation methods

as allocated by the computer.

U.S. Hog Movements

Hogs destined for the U.S. are sent to Northern California (20%) and South Dakota (80%). Of the 284,619 total live hog exports to the U.S., 56,924 went to Northern California and 227,695 were sent to South Dakota.

In the case of Northern California the model minimized total transportation costs by shipping from the following supply nodes: (1) Foremost 4,786, (2) Warner 28,165, (3) Cardston 20,159, (4) Pincher Creek 3,454. In all but the first case the figures represent the total production from these supply nodes. All of these points are either south or southwest of Lethbridge. These supply nodes were not further considered to supply other demand nodes. There were 227,695 hogs sent to South Dakota, comprising 80% of the hogs sent to the U.S. This demand was met by having hogs shipped from the following supply nodes: (1) Lethbridge 221,773 and (2) Foremost 5,922. In meeting the number of hogs sent to South Dakota the remaining supply from Foremost was exhausted as well as the majority of hogs available from Lethbridge.

The minimum transportation cost solution to meet the requirements of the U.S. shipments drew heavily from the supply nodes closest to the U.S. border, which is what would be expected *a priori*.

Canadian Hog Movements

This section begins with British Columbia, which received 177,440 Alberta hogs sent for slaughter in 1984. In order to minimize total transportation costs from the supply nodes the following points were chosen by the computer: (1) Lethbridge 43,253, (2) Vauxhall 38,755, (3) Claresholm 24,884, (4) Vulcan 22,468, (5) Brooks 9,122, (6) Edson 6,150, (7) Whitecourt 6,285, (8) Grande Prairie 17,255, (9) Valleyview 9,268. There were 38,958 hogs allocated to B.C. from Northern Alberta which is approximately 20% of the total.

Alberta Hog Movements

Demand at Red Deer was met from 14 supply nodes which are geographically closest to this centre. The following supply nodes were chosen to fulfill the requirements at Red Deer: (1) Hanna 10,778, (2) Oyen 9,591, (3)Consort 4,280, (4) Morrin 8,528, (5) Three Hills 74,291, (6) Didsbury 20,617, (7) Stettler 30,974, (8) Castor 14,052, (9) Killam 14,052, (10) Czar 2,753, (11) Rocky Mountain House 9,644, (12) Ponoka 37,607, (13) Lacombe 141,570, (14) Innisfail 75,742, and (15) Red Deer 36,632.

Edmonton, which had the greatest number of hogs demanded in 1984, was supplied by 31 supply nodes. The area used to supply Edmonton demand is extensive ranging from north of Red Deer to northern Alberta. It was not practical to list these supply nodes separately, therefore only the

code numbers are supplied and these can be cross referenced with the complete list of supply nodes in Appendix V. Edmonton was supplied from numbers 23, 24, 25, 31-50, and 55-62.

Edmonton had the greatest demand but the high number of supply nodes reflects the northern Alberta supply nodes which are great in numbers but have relatively low numbers of hogs to supply.

1984 Hog Movements

In order to arrive at a reference point for the transportation model it was necessary to review the actual movement of hogs in Alberta. This provided a useful comparison to the model results discussed earlier. Hog movements on a per hog basis could not be calculated, thus, figures used in this study were supplied by Rod Buray of the APPMB over the course of several interviews. For each of the 62 supply nodes it was necessary to have the percent of movements to each of the six demand nodes. Therefore, the figures used for the actual hog movements were based on the percentage movements related to hauling patterns of truckers serving the supply nodes.

Compared to the model results reported earlier, actual hog movements varied the greatest in the southern portion of Alberta. For example, the model allocated a portion of the hogs to the U.S. from Foremost, Medicine Hat and Brooks, while the actual movements are primarily to Red Deer. The

Edmonton, Calgary and Red Deer demands were satisfied in basically the same manner as the model. The supply nodes closest to these demand nodes were utilized in both cases.

Total Costs from the Model

Over the one year period chosen the total minimum transportation costs calculated was $7,408,588.31. This would be the minimum cost to transport hogs produced in Alberta to the six demand nodes used in the model. This total is also based on the rate schedule derived from average trucking rates.

1984 Costs for Alberta Hog Movements

Actual costs were calculated by taking the percentage of hog movements reported by the APPMB which were translated into actual numbers then multiplied by the rate schedule used in this study. Total costs for each demand node are reported in Table IV.3 along with the results from the model. In all cases the results from the model show lower transportation costs than the actual figures. However, analysis of each demand centre show that the percent difference between actual and the model results are in many cases quite close. Table IV.3 shows that the difference between actual costs and the model results range from 5% to 59% with the overall difference of 14%. In light of the marketing difficulties encountered by the APPMB in 1984, the board's performance was reasonably close to the model

Table IV.3

Alberta Transportation Costs: Actual and Model Results, 1984

	Actual Costs'	Percent Difference	Model Results	Dollar Difference
Edmonton	1,939,927	15	1,683,661	255,966
Red Deer	937,465	31	711,591	225,874
British Columbia	1,522,127	5	1,449,341	72,786
Northern California	857,434	10	779,520	77,914
South Dakota	2,765,354	11	2,475,788	289,566
Calgary	492,369	59	308,688	183,681
Total	8,451,376	14	7,408,589	1,042,787

' Data derived from a) model cost coefficients and b) personal communication with Rod Buray (APPMB) to establish actual transportation routes.

results. The cost differences, for example, from the Edmonton area, could have been eliminated quite effectively if no hogs were moved to the U.S. from Edmonton. Over the last 3 months shipments of hogs to the U.S. have changed drastically, making it difficult to devise strategies to reduce the cost of U.S. hog shipments. Ideally there should be no hogs moving out of the Edmonton area to the U.S.

The 5% difference between the model results and actual movements to B.C. translate into $72,000. On a per hog basis this would be 40 cents per hog or .2 cents per pound live weight. The difference in the Edmonton totals between actual and model results is $255,966 which is 32 cents per hog or .2 cents per pound live weight. In the case of Red Deer the $225,874 difference translates into 47 cents per hog or .2 cents per pound live weight. Northern California and South Dakota difference worked out to 1.36 and 1.27 per hog. On a per pound basis the difference is .6 and .5 cents per pound respectively.

The U.S. destinations show the greatest difference between model and actual results on a per hog basis. Recent changes (tariff and health regulation rulings) have greatly reduced the shipment of Alberta hogs to the U.S. The other demand nodes show a difference of 32 and 47 cents per hog for Edmonton and Red Deer.

In the case of Calgary, which no longer operates as a demand centre, the importance of the 59% difference between actual and model results would no longer be significant. The

Calgary area production would be allocated among the other demand nodes which, in the case of Red Deer, could further reduce the percentage difference given the close proximity of Calgary to Red Deer.

Overall, the decision to implement strategies which would attempt to reduce the difference between the model and actual results would have to be considered carefully. In aggregate, the difference between the model and actual results would be 53 cents per hog. The costs of implementing any strategies to reduce this difference would have to be significantly less than the benefit. The decision to implement changes which would impact on the above would have to be made by the APPMB.

There is an opportunity for further studies which could be done aimed at measuring the cost and benefit of strategies to reduce hog transportation costs in Alberta.

H. Summary of Chapter IV

The procedures for the linear transportation problem were outlined, noting this study used the standard linear program package. The characteristics and assumptions used for the model in this study were introduced. Data sources for both the supply and demand nodes were expanded on explaining the choice of both supply and demand nodes.

The reported minimized transportation costs, over a one year period, was $7.4 million dollars. This figure is based on the rate schedule constructed and shows the cost to move

hogs produced in Alberta by commercial means. As stated earlier it was not practical to analyze the transportation costs from the farm gate to the selected supply nodes. Actual costs which were estimated at 8.45 million dollars present a difference of 14 percent in costs above what was calculated via the model.

V. Conclusions and Recommendations

A. Fulfilment of Objectives

The following will list the objectives of the study and report the results.

Objective Number One

Objective number one reviewed the major regulations which affect the trucking industry. The introduction contains a review of the historical events which brought about such regulations. Many regulations were precipitated to a large degree by the railroads who were involved with the initial proceedings. The primary reason for the concern of the railroads was that trucking was beginning to compete with the railroads which themselves had been regulated for many years.

Federal and provincial roles in trucking regulation were recorded and the lack of homogeneity in regulations were pointed out. This lack of homogeneity adds a cost to the trucking industry due to the fact that extra effort must be taken to adhere to the various provincial regulations. A recent announcement by both the federal and provincial governments should tend to harmonize regulations which will in turn reduce the cost of compliance.

Economic and non-economic regulations were reviewed and the effects of these regulations on cost were reported. Estimates of the cost of regulation were supplied for direct

costs which include compliance costs. Indirect costs such as the cost of inefficiency are difficult to calculate.

The final section of this chapter dealt with operating authorities and the public hearing process. Problems with the current system were examined such as the placing the burden of proof on the applicant as to why an individual should be allowed an operating authority. The formal public hearing order was reviewed as well as the regulations and acts which affect this hearing process. Recent changes proposed and agreed upon in principle were reported in conjunction with the possible outcomes of these changes.

From the above it would be difficult to estimate the percentage of costs which could be attributed to the regulatory parameters under which Canadian trucking firms operate. In Chapter II it was pointed out that costs are minimized according to the constraints associated with the issuing of licences.

In a study conducted by D.L. McLachlan in 1971, he was able to calculate the price effects of regulation. In this study Alberta was designated as a less regulated province which in turn was compared to more highly regulated provinces. His estimate of the effect of regulation on price was approximately 30%. In Alberta this figure could be applied to extra-provincial operations which is regulated as in other provinces. In the case of intra-provincial movements this figure would be overestimating the cost due to the fact that once an operating authority is granted

truckers are free to operate in all areas of the province of Alberta. That is to say there are no entry controls and rates do not have to be filed in Alberta. However, he also reported in his study that "United States data indicated price falls of 33-36%, 12-53% and 16-59% for agricultural products brought within the exempt category".**

Impending changes in the regulatory framework, which will exempt certain agricultural products, could have an effect on the prices charged to haul hogs. The figures presented above show a broad range of price effects. The lower estimate of 12-16% if applied to the minimum actual transportation costs found in this study could translate into a savings of $888,960 to the hog industry for transporting hogs, once the impending changes in regulation are implemented.

The price effects used in McLachlan's study are based on estimates from the U.S. trucking industry. In the near future it would be advisable to conduct a study which investigates price effects, once the proposed deregulation of the Canadian trucking industry becomes official.

Objective Number Two

Objective number two was to document current transportation rates and volumes of shipments from selected supply nodes. The fulfillment of this objective relied on data supplied by the APPMB. The current transportation rates

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** McLachlan, p. 29.

were used to construct a rate schedule on a per mile basis for hauling hogs in Alberta, B.C., and the United States. These rates were also broken down by census division and reported in Table III.4. The results show a great deal of variation between and within census divisions. Observations on the level of competition are difficult to make in that census divisions with a large number of rates recorded tended to have lower average rates, however in most cases this would reflect nearness to market. Comments in Chapter III allude to the lack of competition in certain areas of the province. Volumes of shipments were recorded from APPMB production data and were presented in Table III.2. This table showed that census divisions 2, 5, 6, 7, 8, 10, 11 and 13 produce the majority of hogs in Alberta.

Objective Number Three

The third objective of this study was to compose an inventory of the number of vehicles, capacity and types available for hog transportation. The first part of this objective, reporting the numbers of vehicles, was accomplished using APPMB data. What is presented in Table III.3 is a listing of the potential number of truckers available to transport hogs in Alberta. This data is based on truckers who have hauled hogs for the APPMB, however, there are many other livestock haulers who have authority to haul hogs under the terms of their operating authority. The numbers in this table also assume one truck for each mailing

address. This would tend to underestimate the number of trucks available to haul hogs in a particular area. However, the majority of truckers are owner operators with only one vehicle available to haul hogs.

Table III.1 reports the types and capacities of units available to haul hogs. Basically there are two identified units for hauling hogs (1) straight truck with a box, (2) tractor trailer combinations. As presented in the table each group has a number of subgroups by size and capacity of the truck box and different trailers. Also, utilization of these units was documented using data from the survey. Average trip length was also calculated from questionnaire results. These results show that straight trucks are used for shorter hauls while the tractor trailer combinations tend to be used for longer hauls. These results are in harmony with the method of pick-up; straight trucks are used for farm to farm pick-up while tractor trailer combinations tend to pick-up hogs at assembly yards and APPMB terminal yards.

Objective Number Four

Objective number four used the linear programming model as a tool to minimize transportation costs for hogs produced in Alberta. This model was based on a one year period, thus, costs were not minimized according to day to day changes in the hog market. The computer solution showed the minimum cost for transporting hogs both nationally and internationally along with the various supply nodes which

satisfy demand at the demand nodes. This in turn was compared to actual hog movements.

The dollar figure results from the model show that over 7 million dollars were spent to transport hogs from the supply nodes to the various demand nodes during a one year period. In comparison, actual hog transportation costs were in excess of 8 million dollars which is 14% more than the model results.

Results from a study done by McLachlan investigated possible price effects of regulation. His results along with results from studies conducted in the U.S. show a range from 15-56% in transportation price reductions for agricultural products in the exempt classes. Using the lower estimate this value was applied to the results on minimum transportation costs in this study. A potential reduction of $890,000 could be expected if deregulation were to take place in the near future. This observation is relevant, in that it has already been announced that in the very near future regulation in the Canadian trucking industry will be greatly reduced.

B. Recommendations

The following recommendations have been made based on observations from this study.

1. If the present regulatory framework is to be maintained rates should be more closely monitored, and the necessary infrastructure set up to gauge if rate changes

are fair and equitable. This recommendation is counter to trends in deregulation which have been gaining momentum over the last 10 years. Also one can visualize the increased costs which the above would incur.

2. The recent proposed changes in trucking regulation agreed upon by federal and provincial agencies would shift the burden of proof from the applicant to the respondent for the granting of operating authorities, and is fully supported by this study. This proposed change would make the hearing process more equitable and the incidence of frivolous objections would be greatly reduced.
3. In the case of extra and intra provincial operating authorities it is recommended that the term domestic livestock not be used and in its place specific livestock be listed. For example an authority will specify the type of livestock (hogs) which trucking firms may haul.
4. Hogs, being a primary agricultural good should be exempt from regulations. The nature of the product requires that time for delivery to market be at a minimum. This would be in line with the exemptions for primary agricultural goods in the U.S.
5. Under the present regulatory framework the use of the term **in the public interest** does not have explicit interpretations as used by the regulatory boards across Canada. There is a need to have clear guidelines for

this term when used in hearings for operating authorities. Barring the inability to define public interest in an equitable manner perhaps it is time to adopt a new set of criteria for granting an operating authority.

6. With regard to surveying individuals in the trucking industry it is recommended that for further studies using questionnaires, a two stage approach be utilized. The first being a general questionnaire which would investigate the effects of regulations, average cost per mile, and utilization. The second stage would be more specific dealing exclusively with the livestock industry.
7. To increase the quality of data it is recommended that manifests clearly state pick-up charges and transportation rates separately. This change would indicate if pick-up rates are being used to reduce the transportation rates charged in remote areas.
8. It is recommended that trucking rates be monitored by the APPMB and that rates published by area be made available to producers upon request. This would increase the information base available to producers with regard to trucking rates. The APPMB provides various market information which assists producers in their day to day operations. The providing of a listing of trucking rates in an area would not prove a large burden to the Board and the available information would be valuable to

producers in highly competitive areas. The APPMB is not involved in trucking rate regulation and can only act as an information medium to report the rates charged to producers. This service if implemented would be for intra provincial operations only where there is a great deal of variation in rates within census divisions.

C. Recommendation for Further Studies

The proposed changes in regulations which will be implemented over the next two years will offer an excellent opportunity to conduct a study which will report the effects of deregulation of trucking in the livestock hauling industry. For example, a study dealing exclusively with pricing efficiency could provide valuable results.

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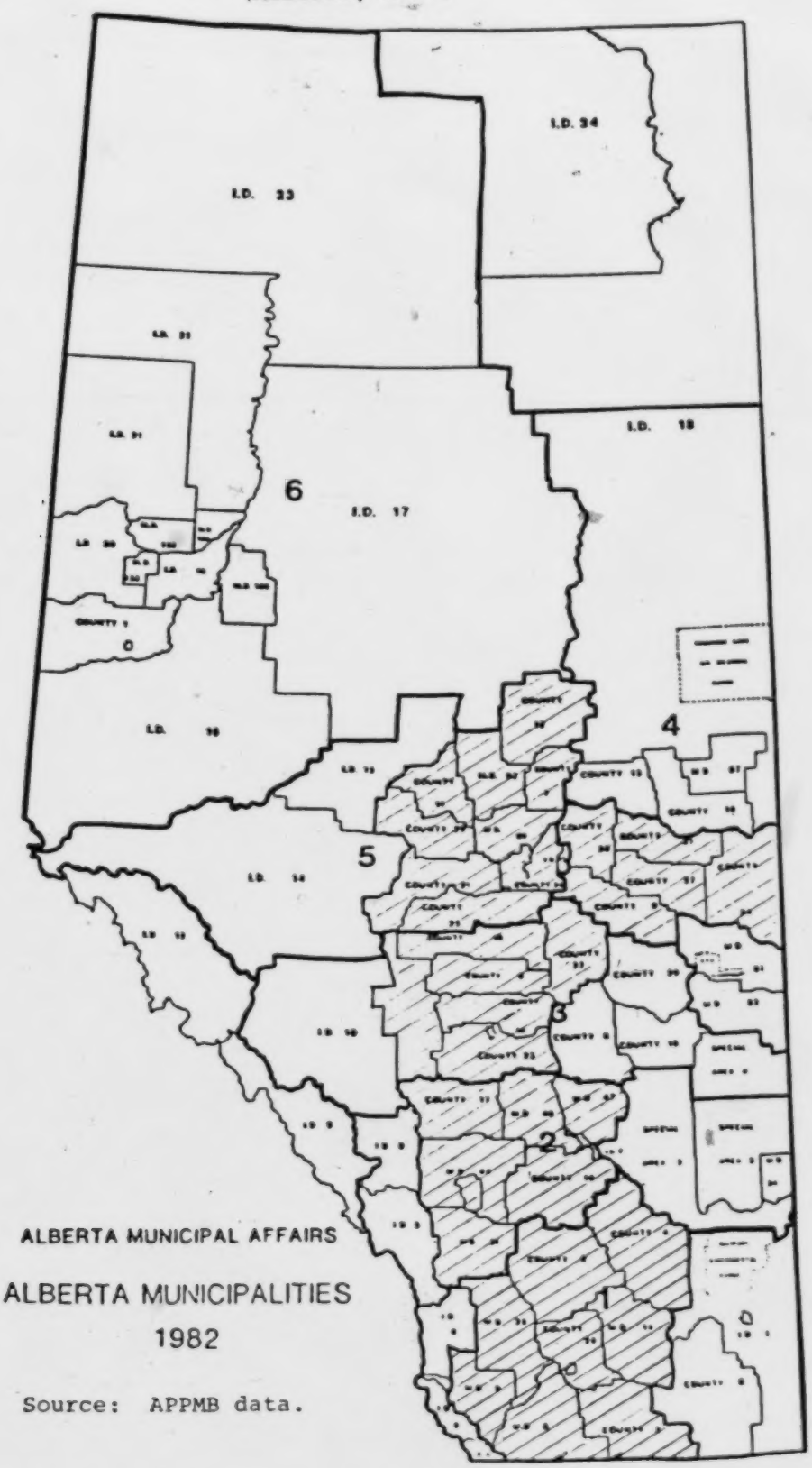
Appendix I

Hog Production from Dressed Weight Settlement Figures
(Alberta, 1984)



ALBERTA MUNICIPAL AFFAIRS

ALBERTA MUNICIPALITIES
1982

Source: APPMB data.

Appendix II

MT860

Alberta

TRANSPORTATION

Alberta Motor Transport Board

NOTE

ALL INFORMATION BEARING ON AN APPLICATION OR OBJECTION (EXCLUDING FINANCIAL STATEMENTS) WILL BE AVAILABLE FOR PUBLIC SCRUTINY.

ALBERTA MOTOR TRANSPORT BOARD
403 343-5430
TELEX 038-3250 TWX 610-841-1058
PROVINCIAL BUILDING
P.O. BOX 5002
4920 - 51 STREET
RED DEER, ALBERTA, CANADA
T4N 5Y5

FORM B

CERTIFICATE OF SUPPORT OF APPLICATION FOR EXTRA PROVINCIAL OPERATING AUTHORITY

TO THE ALBERTA MOTOR TRANSPORT BOARD

DATE RECEIVED BY BOARD

On behalf of

Carrier's Name _____

Address _____

_____

1. QUALIFICATIONS OF WITNESS

Name _____

Name of firm with which employed _____

Position with firm _____

_____

How long with the firm _____

How long in present position or capacity _____

Outline duties as they relate to transportation

_____

_____

Address _____

_____

Phone Number _____

Address of parent company or head office _____

_____

Phone Number _____ Area Code _____

2. The service of the applicant is required for the transportation of the following:

COMMODITY	ORIGIN State or Province	DESTINATION State or Province	VOLUMES (Average Per Month)

3. Please state commodities for which vice-versa on operating authority is required and outline the reasons why:

_____

_____

_____

_____

4. What type of equipment is required to move your commodities?

(a) Bulk in hopper type vehicles? _____

(b) Bulk in pneumatic vehicles? _____

(c) Bulk in tank type vehicles? _____

(d) Reefers or dry vans? _____

(e) Highboy or lowboy trailers? _____

(f) Specially designed trailers? _____

5. Will the service you require be:

(a) L.T.L. shipments? _____

(b) Truckload lots only? _____

6. Does the applicant have the type of equipment required to meet your transportation needs?

Specify. _____

_____

7. How are your goods now being transported?

(a) Percentage by rail _____ %

(b) Percentage by Motor Carrier — Common Carrier _____ %

— Own vehicle _____ %

8. Name the Motor Carriers used in the past and those presently being used.

NAME	ADDRESS	PHONE
In the past:		
_____	_____	_____
_____	_____	_____
_____	_____	_____
At the present:		
_____	_____	_____
_____	_____	_____
_____	_____	_____

Have you any complaints with respect to the service of the above carriers?

_____

_____

_____

_____

9. What other carriers are you aware of who can provide the service and have the necessary Operating Authority?

_____

_____

_____

_____

_____

Which of these have solicited your business?

NAME	ADDRESS	PHONE

Why did you not employ these carriers?

_____

_____

_____

10. If rail service is used, please comment briefly on the service as it pertains to your commodities.

_____

_____

_____

_____

11. Have you previously used the service of the applicant?

Yes _____ No _____

12. If the applicant is granted how will it improve your business?

_____

_____

_____

13. Are you supporting this application because of reduced frieght rates or because of the service offered by the applicant? _____

By signing and submitting this certificate of support the undersigned individual on behalf of the Corporation, Association or Partnership he represents, certifies to the MOTOR TRANSPORT BOARD of the Province of ALBERTA that he, or an authorized and qualified representative of the Corporation, Association or Partnership, will, if required, appear and testify on the applicant's behalf at a regular meeting of the Motor Transport Board or at a Public Hearing should the Board rule that a Public Hearing is necessary.

Should the support for this application or agreement to appear before the Board, if required, be withdrawn or changed in whole or in part, the undersigned agrees to immediately inform the MOTOR TRANSPORT BOARD.

I, the undersigned, hereby declare that I am duly qualified and authorized to make this Certification of support and furthermore declare that I have to the best of my knowledge, belief and ability supplied true and correct information.

DATED: _____ 19___

_____

FIRM, CORPORATION, ASSOCIATION, PARTNERSHIP, ETC.

_____

SIGNATURE TITLE

_____

ADDRESS

Alberta

TRANSPORTATION

Alberta Motor Transport Board

403/343-5260
Telex 038-3250 TWX 610-841-1058
Provincial Building
P.O. Box 5002
4920 - 51 Street
Red Deer, Alberta, Canada
T4N 5Y5

Application No.

DATE RECEIVED BY BOARD

FORM C

RESPONDENT'S STATEMENT IN OBJECTION TO EXTRA-PROVINCIAL APPLICATION FOR OPERATING AUTHORITY BEFORE THE ALBERTA MOTOR TRANSPORT BOARD

1. Name of Applicant Carrier _____

   Address _____

   _____

2. Name of Respondent _____

   Address _____

   _____

   Telephone Number _____

3. Name of person making representation on behalf of respondent _____

   Position or capacity with firm _____

   Telephone Number _____

   How long employed by respondent _____

4. Specify the part of the authority being sought in the application to which you are opposed.

   _____

   _____

   _____

   _____

5 Attach copy of respondent's Alberta Operating Authority and INDICATE that portion which covers that sought by the applicant.

Attach copy of respondent's CORRESPONDING authorities from other jurisdictions than Alberta and INDICATE that portion which covers that sought by the applicant

Attach a list of respondent's equipment giving details of the type of trailers and tractors owned and leased. If special equipment is necessary for authority in application being opposed, explain and describe equipment (provide photographs if possible.)

6. (A) What volume of Extra-Provincial traffic for the commodities sought by the applicant did you move in the last year?

Number of Shipments _____

Last year _____

This year _____

(B) List names and addresses of shippers or consignees for whom shipments shown above were moved. (Extra-Provincial traffic only.)

_____

_____

_____

_____

_____

_____

7. Have you as the respondent been approached or solicited for any traffic from a shipper of the commodities herein opposed? (Indicate names of shippers, dates approached and by whom?)

_____

_____

_____

_____

_____

Was respondent able to provide service? Yes _____ No _____

Was the service used by shipper? Yes _____ No _____

If "NO" please comment _____

_____

_____

8 Outline briefly the ability of respondent to handle the commodities being applied for which you are opposing and how it will fit into your system, including availability of your equipment to handle this traffic.

_____

_____

_____

_____

_____

9 Explain briefly how the granting of this application will affect your business either directly or indirectly.

_____

_____

_____

_____

_____

10 Will a solicitor, or representative, of your firm attend a regular Board Meeting in support of your protest? Yes _____ No _____

11 In the event the application is declined to the test of a Public Hearing will you be prepared to appear at this Public Hearing?

_____

On the basis of the above information submitted I hereby declare that I have to the best of my knowledge, belief and ability supplied true and correct information.

_____

(PRINT) Name of Representative _____

_____

Address _____

_____

_____

_____

Telephone Number _____

SIGNATURE _____

Date _____ 19___

Alberta
TRANSPORTATION
Motor Transport Board

4th Floor, Provincial Building, 4920 - 51 Street, Red Deer, Alberta, Canada T4N 6K8 Phone: (403) 343-5430 Telex: 038 3250
TWX: 610-841-1058

INFORMATION REQUIRED FOR EMERGENCY TEMPORARY AUTHORITY

QUESTIONS TO BE ANSWERED BY THE CARRIER:

1. Name, address, and Telephone Number

   Name: _____

   Address: _____

   _____

   Telephone Number: _____

2. Name of the shipper

   _____

3. Number of Single Trip Permits used

   _____

4. Commodity/Origin/Destination

   Commodity/ies: _____

   Origin: _____

   Destination: _____

5. Length of time required for the Temporary Authority

   _____

6. Details of home jurisdiction operation authority for non-resident carriers

   _____

   _____

   _____

   _____

   _____

7. Will permanent application be made?

   _____

Signed _____

Title _____

. . . Continued on reverse side

INFORMATION REQUIRED FOR EMERGENCY TEMPORARY AUTHORITY

QUESTIONS TO BE ANSWERED BY THE SHIPPER:

1. Name, address and Telephone Number

   Name: _____

   Address: _____

   _____

   Telephone Number: _____

2. Name of the Carrier

   _____

3. Commodity/Origin/Destination

   Commodity/ies: _____

   Origin: _____

   Destination: _____

4. Proposed date of first movement

   _____

5. Length of time required for the Temporary Authority

   _____

6. Number of truck loads and type of equipment required

   _____

   _____

   _____

7. Nature of Emergency

   _____

   _____

   _____

8. List of authorized carriers who refused or have been unable to provide service

   Co.: _____ Person: _____ Phone: _____

   Co.: _____ Person: _____ Phone: _____

   Co.: _____ Person: _____ Phone: _____

   Co.: _____ Person: _____ Phone: _____

9. An indication of whether the shipper will be supporting a permanent application

   _____

   Signed _____ Title _____

Alberta

TRANSPORTATION

APPLICATION TO THE MOTOR TRANSPORT BOARD FOR AN INTRA-PROVINCIAL OPERATING AUTHORITY CERTIFICATE OR CERTIFICATE AMENDMENT

Motor Transport Branch

4th Floor, Provincial Bldg.
4920 - 51 Street
Red Deer, Alberta, Canada
T4N 6K8

NOTE: Answer all questions fully. Mark N/A where not applicable. Incomplete applications may be returned or delayed.

On the basis of information herein submitted, I hereby make application for (check one)

☐ a new Operating Authority Certificate

☐ an amendment to Operating Authority Certificate Number _____

Date _____

Full Name of Applicant(s) _____

Company or Trade Name if used _____

Applicant's Address _____ Postal Code _____

Telephone Number _____

Address of Business Premises _____

Postal Code _____ Telephone Number _____

1. Type of Operation (check one)

☐ Single Proprietorship

☐ Partnership — Names and Address of Partners

_____

_____

_____

☐ Limited Company or Incorporation (attach copy of Certificate of Incorporation) — Names and Addresses of Principal Officers and Alberta Manager

_____

_____

_____

2. Check commodities you intend to transport from point to point in Alberta.

   - ☐ General Merchandise
   - ☐ Cargo Insurance Exempted Commodities (Regulation 3.6.5.)
   - ☐ Livestock
   - ☐ Petroleum Products
   - ☐ Mobile Homes and Half Houses
   - ☐ Used Household Goods

3. Attach a complete and current list of equipment operated by you, giving make, year, serial number, type (truck, power unit, semi-trailer, etc.).

4. Applicant must attach evidence of a minimum of six months' residency in Alberta (not applicable to application for amendment)

   a. Photostatic copies of any two of (1) Alberta Health Care Insurance Card; (2) Alberta Driver's Licence; (3) Salary or Wage Cheque Stubs; (4) Rent or Mortgage Receipts (5) Bank Statements (confidential).

   b. If applicant is a student, proof from the Institution showing attendance for the last six months is required.

5. Valid and subsisting cargo insurance must be maintained by the applicant in such amounts as provided by the Regulations under the Public Service Vehicle Act.

6. Certification

   I hereby certify to the best of my knowledge, information and belief, that I have supplied true, accurate and complete information to all the foregoing questions in this document.

Single Proprietorship	_____	Title _____
Partnership, all must sign	_____	Title _____
	_____	Title _____
Limited Co. or Incorporation	_____	Title _____

Appendix III

Survey of the Hog Trucking Industry in Alberta

A. Equipment

1. In as much detail as possible describe the numbers and styles of trucks and trailers used by your firm to handle livestock. In order to maintain consistency in the description of truck types, would you please provide specific information (as shown in the first line of the Table).

Number of Trucks	Type	Capacity (Number of Market Hogs)	G.V.W.*	Average Miles/Km Per Year	Truck** Box Length
Eg. 4	straight truck	35			22 ft.

*Please specify lbs. or kgs. ** Specify if double or single deck.

2. What is the average length of hauls by? (for hogs only)

Straight Truck	Km.	Miles	Tractor Trailer Combination	Km.	Miles

(Please specify if units are miles or kilometers).

B. Utilization

1. What percentage of your trucks and trailers are used for hauling:

	Straight Trucks	Tractor Trailer Combination
Hogs		
Beef		
Other Livestock		

2. What percent of hauls are at?

	Straight Trucks	Tractor Trailer Combination
Full load:	_____	_____

3. What percent of total trips have back hauls? _____

4. Please list the types of goods most frequently hauled back and the percentage of distribution:

Type of Good	Percent of Distribution
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
TOTAL	100%

C. Service Provided and Areas Served

1. This table is designed to establish the methods used to pick-up hogs and the percent of your business that these methods comprise.

Pick-up at:	% of Business
Assembly Yard	_____
Assembly by travelling from farm to farm	_____
APPMB Terminal Yards List Location(s): _____	
_____	_____
Stock Yards List Location(s): _____	
_____	_____
Other List Location(s): _____	
_____	_____ 100%

Does your firm own or operate the hog assembly yard? Yes _____ No _____

Location _____ Capacity _____ (# of hogs)

2. What is the main area(s) in Alberta in which the majority of your business takes place.

Area of Assembly	%	Destination	%
	100%		100%

D. Rates and Costs

1. Do you have a published rate schedule?

   a. If yes, would you please supply the schedule.

   AND ALSO, would you list pick-up charges separately.

   b. If no, would you please supply us with your company's rate schedule (by hog or cwt.) Please use a separate piece of paper and attach to this questionnaire.

2. If you charge by the mile/km, please list for example price per mile if constant or price per blocks of mile/km, i.e. 1-50, 50-100, etc.

   AND ALSO, would you list pick-up charges separately.

3. Would you please supply total costs per running mile/km by truck type.

Straight Truck	Cost/Mile	OR Cost/Km
_____	_____	_____
_____	_____	_____
Tractor Trailer Combination		
_____	_____	_____
_____	_____	_____

E. Future and Comments

Do you expect to increase, decrease or keep your fleet size constant in the near future? Please list any concerns you may have with respect to trucking, for example, should the trucking industry be regulated in rates, entry conditions, etc.

_____

_____

_____

_____

_____

_____

_____

_____

Appendix IV

Estimated Freight Rates in Alberta 1984, $/Hog

Miles	Rate	Miles	Rate
0- 10	.85	751- 800	8.81
11- 20	.94	801- 850	9.32
21- 30	1.03	851- 900	9.83
31- 50	1.54	901- 950	10.35
51- 60	2.05	951-1000	10.86
61- 80	2.22	1001-1050	11.37
81-100	2.65	1051-1100	11.88
101-120	2.74	1101-1150	12.40
121-140	2.82	1151-1200	12.91
141-160	2.91	1201-1250	13.42
161-170	2.99	1251-1300	13.94
171-190	3.08	1301-1350	14.45
191-220	3.33	1351-1400	14.96
221-250	3.59	1401-1450	15.48
251-270	3.76	1451-1500	15.99
271-350	4.27	1501-1550	16.50
351-400	4.62	1551-1600	17.01
401-450	5.22	1601-1650	17.53
451-500	5.73	1651-1700	18.04
501-550	6.24	1701-1750	18.55
551-600	6.75	1751-1800	19.07
601-630	7.27	1801-1850	19.58
651-700	7.78	1851-1900	20.09
701-750	8.29	1901-1930	20.61

Source: Data supplied by APPMB and conversations with Rod Buray.

Appendix V

Alberta Supply Nodes

1. Formost
2. Medicine Hat
3. Brooks
4. Warner
5. Lethbridge
6. Vauxhall
7. Cardston
8. Pincher Creek
9. Claresholm
10. Hanna
11. Oyen
12. Consort
13. Vulcan
14. Strathmore
15. Morrin
16. Three Hills
17. Drumheller
18. High River
19. Calgary
20. Didsbury
21. Stettler
22. Castor
23. Killam
24. Czar
25. Wainwright
26. Rocky Mountain House
27. Ponoka
28. Lacombe
29. Innisfail
30. Red Deer
31. Holden
32. Two Hills
33. Camrose
34. Vermillion
35. Vegreville
36. Lamont
37. Morinville
38. Sherwood Park
39. Thorsby
40. Edmonton
41. Westaskiwin
42. Smoky Lake
43. St. Paul
44. Bonnyville
45. Lac La Biche
46. Thorhild
47. Barrhead
48. Athabasca
49. Sangudo
50. Westlock
51. Edson
52. Whitecourt
53. Grande Prairie
54. Valleyview
55. High Prairie
56. Eaglesham
57. Hines Creek
58. Manning
59. High Level
60. Spirit River
61. Grimshaw
62. Fairview